Is Long-Term Care Social Insurance Affordable in Developed Countries?

Doug Andrews, PhD, FIA, FCIA, FSA, CFA
University of Southampton
dwa007@hotmail.com

Presented at the Living to 100 Symposium
Orlando, Fla.
January 5-7, 2011

KEY WORDS: Activities of Daily Living (ADLs), CLASS Act, Instrumental Activities of Daily Living (IADLs), Long-Term Care (LTC), Social Insurance

Copyright 2011 by the Society of Actuaries.
All rights reserved by the Society of Actuaries. Permission is granted to make brief excerpts for a published review. Permission is also granted to make limited numbers of copies of items in this monograph for personal, internal, classroom or other instructional use, on condition that the foregoing copyright notice is used so as to give reasonable notice of the Society's copyright. This consent for free limited copying without prior consent of the Society does not extend to making copies for general distribution, for advertising or promotional purposes, for inclusion in new collective works or for resale.

Abstract

Most developed countries are facing financial pressures as their social support systems attempt to meet the needs for retirement income and health care for an aging population. But as the population ages, increasing needs for personal non-financial assistance and non-acute health care support are being identified. These needs are placed in a large, non-homogeneous category of long-term care (LTC) and frequently are not covered by national social insurance programs.

After identifying the breadth of definitions of LTC needs, it is argued that LTC is an insurable risk. Certain aspects of this risk are borne better collectively through social insurance programs, than privately by self-insurance or through the insurance markets. But is LTC social insurance affordable in developed countries?

After a Royal Commission on Long Term Care in 1999 in the United Kingdom recommended that nursing care and personal care be provided free at point of delivery, Scotland implemented these recommendations. England has decided that such an approach is unaffordable and is continuing to consider the matter. Canada, Germany, Japan, the United Kingdom and the United States are developed nations that have taken different approaches to the financing of LTC. The paper focuses on these countries, with occasional references to Scotland.

The costs of LTC are projected to increase substantially. It is argued that when costs are expressed as a percentage of gross domestic product, the future burden of financing LTC would not lead to unbearable tax levels and is not particularly large in comparison to the projected costs for pensions and health care.

The paper identifies other considerations where changes may occur, such as demographic, pattern of care, quality of care and equity release mechanisms, that may affect how LTC is delivered and the cost of its delivery. It concludes that LTC social insurance is affordable in developed countries.

1.0 Background

1.1 U.K. Royal Commission

Prior to the report of the Royal Commission on Long Term Care in 1999 (referred to as the Sutherland report), the rules regarding payment of long-term care (LTC) benefits were uniform throughout the United Kingdom. LTC services were only paid for by the state for those of insufficient means, as determined by a means test. The report recommended that nursing care be universally available and the costs paid for by the state and that LTC services provided outside a nursing care facility be classified as either personal care or housing and living costs. The report recommended that personal care be free at point of delivery but that the housing and living costs components of LTC be financed by the state only for those of insufficient means. Scotland adopted these recommendations and now has almost 10 years of experience in state-financing of LTC services. (Scotland pays for LTC services for those of insufficient means, as determined by a means test.) England implemented the recommendation with respect to care in a nursing facility but continues to pay for other LTC services only for those of insufficient means, as determined by a means test. England has continued to study the subject and numerous reports and reviews have been produced by government-appointed bodies, charities, academics and other researchers.

Part of the explanation given for England not to have adopted the recommendations described above is the very substantial cost (The Information Centre, 2000). This raised the research question: Why are such recommendations affordable for Scotland but not for England? Are there differences in the current or future demographics or the level of taxation that might answer this question? These questions are answered in Section 5.

1.2 Some Definitions

There is not a common definition of what constitutes LTC. Moreover, there are considerable differences among countries with respect to how LTC services are defined in determining whether such services are eligible for payment by the state. These differences of definition make exact comparisons extremely difficult. This subsection provides an explanation of some of the terms used.

A starting point is to define activities of daily living, referred to as ADLs. Although different names may be used to describe them, the standard six ADLs are: bathing, dressing, eating, getting in or out of bed, walking across a room and using the toilet (see for example Johnson et al., 2006). Disability is normally defined in terms of a minimum number of ADLs the person is unable to perform, without assistance. However, the minimum number of ADLs required to constitute disability is not uniformly defined. Jacobzone et al. (2000) consider "severe disability" to include individuals with at least one ADL restriction. Gleckman (2007a) states that the minimum requirement for receiving benefits in the German social insurance system is that the person needs help with at least two ADLs. Johnson et al. (2006) classify adults as severely disabled if they report difficulty with three or more ADLs.

As well as ADLs, one may define instrumental activities of daily living, referred to as IADLs. IADLs include a wide range of activities, tasks such as shopping, preparing hot meals, using the telephone, taking medications, managing money, and functional limitations such as difficulty in bending, reaching and stooping (Johnson et al., 2007), to name only some.

The Scottish legislation that implemented free personal care, at the point of delivery, defines personal care as including help with personal hygiene, continence management, assistance with eating and mobility, counseling and support services, assistance with medication and simple treatments, and personal assistance such as help getting up and going to bed (Bowes and Bell, 2007). In addition to defining personal care and nursing care, the Scottish legislation distinguishes non-personal care such as housing support services and "hotel" costs in care homes (ibid). In brief, the distinction is care that requires contact with the individual is nursing care or personal care and is provided free at the point of delivery, whereas accommodation and living costs are expenses of daily living that the people are responsible for, regardless of disability, unless they have insufficient means, as determined by a means test.

As well as the inability to perform certain ADLs or IADLs, to qualify as LTC, the inability must be expected to continue for some period of time. King (2004) says care should be required for a period of at least three months to qualify as LTC. There may also be a minimum amount of care required per day or per week. For example, not only does the German social insurance system require the person need assistance with at least two ADLs, but it requires that at least 90 minutes of assistance be required per day (Merlis and Van de Water, 2005). By contrast, in Japan a minimal benefit may be available to people who need as little as 29 minutes of daily care (ibid).

These definitions do not include mental illness, in particular Alzheimer's disease and other dementia. People suffering from mental illness may require LTC, even though they may be physically capable of performing ADLs and IADLs.

Various combinations of limitations on ADLs and IADLs, alone or in combination with mental illness could be used to define disability for the purpose of qualifying for long-term care. The Japanese social insurance system uses a 79-item questionnaire of physical and mental status to calculate to which of seven levels of LTC service an applicant is entitled (Glendinning and Bell, 2008). Also, LTC might be available regardless of age, as in Germany, or it might be limited to certain age groups, such as those age 65 and over as in Japan. In Japan, those age 40 to 64 are covered only if they suffer from age-related diseases, such as dementia (Gleckman, 2007a).

Given the wide range of definitions used by different researchers and different countries to determine whether care is eligible for state assistance, it is unlikely there is a single and comprehensive definition of LTC that would be satisfactory for all purposes. Despite the absence of such a single and comprehensive definition, the observations in and the conclusions of this paper are understandable for the purpose of policy direction. However, to implement a policy with respect to state assistance for LTC, it will be necessary to define what care is to be covered and such definitions will likely vary by country.

1.3 Outline of Paper and Methods

There is a large and growing volume of research on LTC. There are also various perspectives from which the subject can be approached. It is likely that different countries will use different approaches with respect to LTC delivery and financing. The idea behind this research arose because Scotland implemented free personal care on the recommendations of the Sutherland report, whereas England considered free personal care to be unaffordable. The focus of the paper is on the broader research question: Is LTC social insurance affordable

in developed countries? To answer this question, arguments are presented regarding insurance, accompanied by statistics regarding developed countries' gross domestic product and tax revenues.

Section 2 of this paper makes the case that insurance is an appropriate product to finance LTC and discusses various types of insurance arrangements. Using a broad definition of social insurance as mandatory insurance involving government in the financing of the insurance, Section 2 concludes that social insurance is the appropriate financing mechanism. It discusses several ways in which social insurance might deliver LTC insurance but does not identify a single way that would be best for all countries.

Section 3 of this paper discusses the projected costs of LTC and shows that these costs are projected to rise substantially. The section shows that as a percentage of GDP, the costs are relatively modest, in comparison to both general tax revenues and the projected cost increases for pensions and health care. These factors suggest that social insurance for LTC is affordable, if countries decide it is one of their spending priorities.

How LTC will develop in the future and what the implications are for financing are unknowable. There is a significant and growing amount of research regarding these questions. Section 4 identifies some of the considerations, but it is not intended to be comprehensive. Section 5 concludes.

2.0 Forms of Financing

2.1 Insurance Is Appropriate

In general, some of the conditions that make insurance a viable form of financing are the following: the timing of occurrence of the event insured against is unpredictable, if it occurs at all, and, if the event insured against occurs, the amount of the loss is of such significance it would be difficult to budget for. Both these conditions are present in the case of LTC. The remainder of this subsection provides support for this statement.

Johnson et al. (2007) have projected disability rates for the population of the United States to the year 2040, using various scenarios and different definitions of disability. With respect to the population 65 and older, those experiencing a severe disability, defined as the presence of three or more ADL limitations, amounted to 9.1 percent in 2000 and is projected to range from 6.1 percent to 9.9 percent, with 8.5 percent being the intermediate projection, in 2040 (ibid). In 2000, there were 3.0 million Americans 65 and older with severe disability and in 2040 this is projected to range from 4.5 million to 7.4 million, with 6.3 million being the intermediate projection (ibid).

If a weaker definition of disability is used, so that those 65 and older would be considered disabled if they report any ADL limitation, the numbers more than triple. In 2000, 10.0 million (30.3 percent) of Americans 65 and older reported any disability. In 2040, the number is projected to increase to 15.1 million (20.3 percent) on the low scenario, 20.9 million (28.0 percent) on the intermediate scenario and 24.6 million (33.0 percent) on the high scenario (ibid).

Ng (2010) reports on research that estimated 69 percent of Americans turning 65 in 2005 would need some LTC before they died. According to this research, people will need an average of three years of LTC; 31 percent do not require any care, slightly less than 30 percent require less than two years of care, 20 percent require two to five years of care and another 20 percent require more than five years of LTC (ibid).

High as these numbers may seem, an essential point is that disability only affects a limited percentage of the population. However, the financial impact of disability can be severe.

Johnson et al. (2006) observe that LTC costs can be staggering. They report that in 2004 in the United States, the average daily private pay rate for a semi-private room was $169 or about $61,700 per year and that the typical user of paid services who receives 60 hours of paid care per month had annual home care costs totaling more than $14,000 (ibid).

Such expenditures are significant for those affected and have a substantial impact on wealth, which may be required in old age. Johnson et al. (2006) find that women 70 or older who enter nursing homes forfeit about $40,000 or more than one-third of the wealth they typically hold, if married, or $20,000 or about 60 percent of median wealth, if single. Disability that strikes seniors increases the likelihood of low income. At 70 and older, the onset of severe cognitive impairment increases the likelihood of low income for married men and women who did not report low income at the start of the period (ibid).

Because the incidence of disability for those 65 and older is sizable, and because the financial impact of disability can be devastating, there is a need for insurance for LTC.

In Subsection 1.2, some of the variations in how LTC has been defined were identified. Moreover, in most countries and most cultures, it is accepted that family members will provide some LTC, if they are able. LTC provided by family members is usually unpaid; however, the costs of providing LTC to family members may appear in other forms, such as increased anxiety, absenteeism or family breakdown. It is not the intention of this subsection to argue that insurance is necessary for every period of LTC. Rather this subsection shows there may be periods of LTC an individual will require that could be devastating financially. Insurance is appropriate for some defined package of LTC. This package will be defined differently by organization or country. This paper does not define the LTC package to be insured.

2.2 Voluntary Insurance is not the Answer

There are a number of insurance approaches — private insurance or social insurance, or some combination of the two — that could be adopted. This subsection discusses the appropriateness of voluntary insurance on its own and concludes that voluntary insurance does not provide adequate coverage for the population exposed to risk. The subsection begins by identifying the characteristics of a voluntary insurance plan that should be in place for it to be viable financially. Then the subsection discusses why such characteristics have been difficult to implement. Finally, the subsection considers whether a voluntary insurance program would provide adequate coverage for the population's needs for LTC insurance, even if all the required characteristics for a financially viable plan were in place.

To operate any insurance program in a financially successful manner, it is essential that total premiums collected are adequate to cover the total cost of claims and all expenses. Typically this means sufficient underwriting controls are present to enable the insurer to determine it is accepting risks consistent with the risk characteristics on which the premium rate structure is based. The premiums must also be sufficient to cover the associated expenses of marketing, risk selection, policy issuance, administration, claims processing, and risk and profit charges. With a product such as LTC insurance, some potential insured individuals will present greater risks of claim than others. More importantly, some of those potential insured individuals will be in a position to know they present a greater risk, for example, because of their health history. In other words, there is much greater potential for adverse selection with voluntary LTC insurance than there is, for example, with voluntary property insurance against theft and fire.

There are a number of established techniques that insurers may use to try to reduce or eliminate adverse selection. One technique is to attempt to determine the risk represented by the applicant's health history and then to charge an adequate premium to cover such a risk or to decline coverage if the risk is considered too great or not possible to price. Where there are restrictions on the ability to impose coverage limitations or exclusions, on the ability to adjust premium rates or on the extent of underwriting that may be used, other techniques have been developed to attempt to get a broad range of risks insured. One method is to insure all individuals that are members of a particular group formed for some purpose other than insurance. The most common form of insurance of this type is insuring all the employees of a particular employer. Another technique involves extensive marketing to insure a large percentage of the population and thereby increase the likelihood that favorable as well as

unfavorable risks are covered. Yet another technique is to require individuals to be insured and to have paid premiums for a certain period of time before they are eligible to have claims reimbursed. This method ensures that a minimum amount of premiums are received from all insured people.

These techniques are all designed to mitigate the effect of adverse selection. Since the objective is to receive adequate premiums to cover claims and expenses, a viable policy design, especially for LTC, might provide an indemnity schedule of cash benefits for specified time periods. This method imposes a dollar limit with respect to any claim period and makes it easier to relate expected claims to expected premiums.

This has been a relatively theoretical explanation; however, these considerations have an important practical application. As part of the health reform legislation in the United States, there is the Community Living Assistance Services and Supports Act (CLASS Act) that introduces a voluntary federal LTC insurance program subject to opt-out and guaranteed issue provisions, with a specified daily cash benefit and monthly premiums. The program is required to charge an actuarially sound premium over a 75-year horizon. Correspondence on the letterhead of the American Academy of Actuaries (AAA) addressed to the U.S. Senate Committee on Health, Education, Labor and Pensions in 2009 with respect to the then-proposed legislation, judged the program design not to be actuarially sound (Stallard and Schoonveld, 2009). The correspondence raised concerns that the then-proposed voluntary insurance program will experience significant adverse selection, which may lead to increased premiums and/or reduced benefits that in turn will reduce participation (ibid). The correspondence (ibid) states that to address many of the concerns and to increase the likelihood that the voluntary federal LTC program will be sustainable, the program could include the following provisions:

- An actively-at-work definition with a requirement of a minimum of 20 to 30 hours of scheduled work or a comparable requirement.
- The use of an underwriting approach for the coverage of spouses not actively at work.
- Restrictions on the ability to opt-out and subsequently opt-in with the use of either a second waiting period for benefits or an application for reinstatement with health questions.
- The use of a benefit elimination period, a benefit period duration less than lifetime, and/or benefits paid based on a reimbursement provision rather than on a cash basis.
- An initial premium structure that provides for scheduled premium increases for active enrollees either at the rate of increase in the Consumer Price Index (CPI) or an alternative lower rate.
- A consistent definition of eligibility for all benefits and benefit levels using the definitions of ADL triggers and cognitive impairment definitions in accordance with the Health Insurance Portability and Accountability Act (HIPAA) of 1996.

Before considering whether a voluntary program, which included the types of provisions specified in the actuaries' correspondence, would accomplish the desirable coverage objectives, let us first note that private LTC insurance has had limited success. Only a very small percentage of the population has purchased insurance, e.g., in 2005 only 6 million to 7 million Americans were covered by LTC insurance (Gleckman, 2007b).

Gleckman (ibid) states that the insurance industry's surveys conclude price is the biggest reason people do not purchase insurance. Although price is a major factor in any purchasing decision, there may be many reasons people do not purchase insurance. Surveys (Peter D. Hart, 2005) suggest the reasons include: there is a feeling LTC will not be needed so many individuals have trouble seeing the value of the coverage; confusion regarding what LTC benefits will be provided by the state, with those surveyed thinking more benefits will be provided by state insurance than is the case; and a belief or hope that the state may change what it does provide and increase coverage by the time the individual may make a claim for LTC. If these reasons truly represent the information with which the public is working, it is unlikely any voluntary program will have much success in achieving high participation.

The reasons given in the foregoing paragraph demonstrate a lack of information on the part of the public. In trying to resolve this problem satisfactorily, an information campaign might be used. (Although, Glendinning and Bell [2008] maintain that prior to needing care and support, individuals are likely to be unclear about what unpaid care may be available, through family and friends, and are unlikely to appreciate the financial implications of needing care.) Suppose that appropriate information were provided (although what that might include with respect to the potential for changes in state coverage is questionable) and further suppose that the types of provisions noted in the actuaries' correspondence (Stallard and Schoonveld, 2009) were included in a voluntary LTC insurance program. Could such a program be expected to meet the coverage objectives?

In Subsection 2.1, it was identified that insurance for LTC is an appropriate protection mechanism because there is a risk that anyone may incur LTC costs during his or her lifetime, yet not all individuals will incur LTC costs, and the magnitude of LTC costs can inflict financial hardship. The types of provisions suggested in the actuaries' correspondence (ibid) are designed to reduce or eliminate adverse selection. Adverse selection may arise in situations in which the individual is in a position of greater knowledge than the insurer regarding the likelihood the individual will incur LTC costs or will incur LTC costs of greater amounts than anticipated by the insurer's premium rates. Control of adverse selection is an important consideration in operating a financially sustainable voluntary insurance program. However, the limitation or denial of insurance to those with greater likelihood of incurring LTC expenses or of incurring LTC expenses of significant amounts, limits or denies coverage to a group who need such coverage. This is the problem faced in trying to deliver LTC insurance on a voluntary basis: How can coverage be extended to those who need the insurance and still provide insurance on a financially sustainable basis? In trying to satisfactorily resolve this problem, it is necessary either not to cover at all some of the most needy who are also the worst insurance risks, or to provide insurance to such individuals with coverage limitations or at higher premiums to be able to cover the costs associated with insuring substandard risks.

As noted, coverage exclusions or limitations affect those who may be most in need of the insurance; therefore, this is not the answer to the coverage problem. Let us consider the alternative of charging premiums expected to be sufficient to cover the costs of the excess (substandard) claims to be incurred. If a common rate structure is used for both standard and substandard individuals, a premium spiral and a participation spiral typically arise, with premiums spiraling up and participation spiraling down. This effect occurs because as rates rise above the actuarially fair premium for standard risks, the better risks or those unable to afford the premiums drop out but the poorer risks remain; the reduced premium base requires

higher premiums from a smaller number of people to cover the costs of the poor risks, which leads to further rate increases, less participation, etc.

In private sector insurance, the solution is to charge higher rates to those exhibiting characteristics expected to result in higher claims costs. For LTC, as well as charging higher premiums to substandard risks that have been identified by underwriting, it is desirable to charge higher premiums to women and to those at higher ages. On average, women have longer life expectancies than men and can also expect to have a longer period of life in old age, without a spouse, to assist with their care, increasing the likelihood they will require paid care. Gleckman (2007b) observes that in policies not priced by sex, there is evidence women may get their money's worth whereas men do not. It is in the nature of LTC insurance that the average annual costs of benefits increase by age and increase sharply at advanced ages (Stallard and Schoonveld, 2009), so viewed purely from the perspective of an insurance pricing strategy, setting premiums by age is justifiable. However, those at older ages, who may need the coverage most, are less able to afford the higher premiums. Gleckman (2007b) reports that an estimated 39 percent of 60- to 64-year-olds could afford coverage, falling to 27 percent of 65- to 69-year-olds, and just 17 percent of 70- to 74-year-olds. Moreover, in some countries, charging higher premiums to those needing the coverage due to existing health conditions or on account of gender or in respect to advanced age would be considered unacceptable, and possibly illegal or immoral. Even if such practices were acceptable, with the exception of setting rates based on gender, these practices could be expected to result in a premium and participation spiral with respect to the elderly, as described above, resulting in a lack of coverage for some of the neediest.

In analyzing the CLASS Act provisions, Jones and Barnett (2010) draw attention to the problem of adverse selection. They succinctly conclude that the only way to get healthy people to participate in a program that overcharges them to subsidize the less healthy is to make the program mandatory (ibid). Voluntary insurance is not the answer.

2.3 Social Insurance Premium Structures

In Subsection 2.1, it has been argued that LTC insurance is appropriate, and, in Subsection 2.2, it has been argued that voluntary insurance is not the answer. My conclusion is that mandatory insurance will address the coverage issue. Based on the unacceptability in some jurisdictions of varying premium rates by age, gender and substandard risk factors, only the case of a common premium level for all insured lives paying premiums at a particular time is considered. (This rather clumsy wording makes allowance for the possibility that claimants or possibly the very elderly might not be required to pay premiums.) The next question to consider is whether private insurers might deliver mandatory LTC insurance without government involvement in the insurance, say on a basis similar to what is being implemented in the United States with respect to health insurance.

Within the entire population there is certain to be some substandard risks that will incur significantly more in claims costs than the average insured person. In a mandatory program, the premiums charged in aggregate will likely be limited to the amount of the aggregate incurred claims and some allowance for expenses; otherwise, there will be public pressure to reduce the premium rates. Given this pressure to limit the total premiums to be charged, the problem for the insurance providers will be how to get a mix of standard and substandard lives that can be afforded by the premiums charged. Due to the mandatory nature of the insurance, some insurers will get a disproportionate share of substandard lives that will

render the insurance unprofitable for those insurers. At some point, such insurers will exit the market and the remaining insurers will be required to assume insurance for the exiting company's policies. Again, some insurers will get a disproportionate share of substandard risks and the pattern repeats.

In a country the size of the United States, with a large number of insurers and the potential for foreign insurers to enter the market, it may take a considerable period of time before it becomes apparent that mandatory private insurance, without state involvement in the provision of insurance, at uniform premium rates is not viable.

One solution is for the government to provide insurance to all risks the private insurers are not prepared to accept and then to allocate the cost of this insurance back to the insurers on a proportionate basis. In this paper, mandatory insurance with state involvement in the provision of insurance is considered to be a type of social insurance. There are many different types of social insurance arrangements that could be used to finance LTC insurance. In the remainder of this subsection, various proposed financing mechanisms are discussed.

Before presenting this discussion, two other observations are in order. First, surveys of people in many countries regularly report that respondents believe the cost of LTC should be shared by the state and the individual (see Peter D. Hart, 2005 for a survey of people in the United States or Caring Choices, 2008 for a survey of individuals in England and Scotland). In the discussion that follows, the emphasis is placed on the state component of financing, but it is recognized that individuals, with the exception of the extremely poor, should be expected to contribute to their LTC expenses. Second, the argument has been made for social insurance on the basis of insurance considerations, but the argument could also be made on the basis of uncertainty, inequalities, lack of information, or emotional and relationship dimensions (as do Glendinning and Bell, 2008).

2.3.1 General Revenues

In countries with a progressive tax system, a strong argument can be made that the payment of certain defined LTC expenses financed by the state from general revenues is equitable. One could also argue that where the tax collection system is well-established and is administratively sound, the use of general revenues to pay for state-financed LTC expenses is efficient. Scotland is an example of a country where general revenues are used to pay for state-financed LTC coverage. In Canada, LTC is a provincial responsibility, not a federal one. The provinces have a progressive tax system, and LTC coverage provided by the provinces is paid for from general revenues.

A disadvantage of using general revenues is that it may make it difficult to track the amounts spent on LTC compared to the amounts collected, which may make it difficult to manage the state financing of LTC in the most efficient manner. Furthermore, in countries that lack a progressive tax system, one could argue that the use of general revenues places an undue burden on low-income taxpayers. Moreover, one could argue, the use of general revenues to pay for LTC expenses may not appropriately allocate the cost of care to those most likely to benefit from the state insurance. For example, in the years following the introduction of LTC insurance, many elderly people may receive significant benefits yet they may pay very little in income or sales taxes.

2.3.2 Specific Social Insurance Premium

A number of countries, such as Germany and Japan, charge a specific premium (or contribution or tax) in respect to LTC. For example, in Germany, workers and their employers pay an aggregate amount of 1.7 percent of pay, shared equally by the employer and the worker. Pensioners also make a 1.7 percent payment, shared equally by the pension fund and the pensioner (Gibson et al., 2007). These payments finance a basic level of LTC available to all. More comprehensive care must be paid for by the individual or through private insurance.

The advantages of a specific charge for LTC include the following: It makes the public more aware of how their taxes are being used, which may make the tax burden more acceptable; it makes it easier to determine if collections and expenditures are aligned, which may result in a greater ability to manage the LTC system efficiently; and it provides a mechanism to level specific charges that may be identified in respect to a specific purpose or social objective. For example, in 2007, Germany began charging an additional 0.25 percent to those without children (Gleckman, 2007a). Presumably the rationale is that those without children are not providing the state with sufficient human capital to assist with the individual's potential LTC needs, such as housing and care, therefore, such individuals should be expected to provide additional money capital.

The main disadvantage of a flat payroll (or pension) assessment is that it is regressive — lower income workers pay the same percent as higher income workers. Moreover, payroll taxes tend to reduce the international competitiveness of businesses.

An interesting variation of a social insurance fund that involves assessments in respect to special purposes on the basis of social objectives and avoids the use of payroll taxes has been proposed by Lloyd (2008) for the United Kingdom. Lloyd argues that those who will benefit in the short term from the implementation of comprehensive universal LTC insurance are the older age groups. In general, these age groups have already accumulated significant wealth (compared to other age groups), and, in particular, because of the significant increase in property values, these age groups have received a significant intergenerational wealth transfer as a consequence of being homeowners. Lloyd argues for the implementation of comprehensive universal LTC insurance, but at least in the short term (during the period of consumption of LTC by this wealthier older age group) that the cost of LTC should be paid for through assessments paid by this age group.

As individuals turn 65, they would be informed about the LTC benefits and the assessment they would be charged to be eligible to receive care. The assessment would make explicit provision to account for variations in income and wealth (including homeownership), and would be progressive, adjusted to individuals' means or income (ibid). Another innovative characteristic is that the assessment need not be paid immediately, but could be deferred, up until death, at which point it would be paid by the estate. During the deferral period, the assessment would accumulate at a favorable rate of interest (similar to the approach used for student loans). A further innovative characteristic is that eligible individuals would be permitted to opt out and to opt back in at a later date, although some adjustment to the assessment would be required (ibid).

2.3.3 Partnership Approach

Although England lacks a comprehensive system of universal free-of-charge LTC, it has produced voluminous literature on how such a system might be implemented and the projected costs of implementation. The partnership model described in this subsection differs from the financing methods already discussed. It would provide a universal free-of-charge minimum guaranteed amount of care, which would be set at a specified percentage of the total assessed care package, and which would vary according to need (Humphries et al., 2010). For example, in one variation of the partnership model, the specified percentage was set at 66 percent (of the total assessed care package), whereas another variation set the percentage at 50 percent (ibid). To receive state funding for care required above the minimum guarantee, individuals would be required to contribute and their contributions would draw a state match. For example, if the specified percentage for minimum care were 66 percent, then the state matching would be 100 percent, i.e., one pound of individual contributions is matched by one pound of state contributions. If the specified percentage for minimum care were 50 percent, then the state matching would be 50 percent, i.e., two pounds of individual contributions are matched by one pound of state contributions. State matching would be available until 100 percent of the cost of the standard care package is achieved, or until individuals decide not to consume more care. Extra private contributions are permitted but are not matched. There would be provision for assistance with additional contributions for those on low incomes (ibid). Table 1 illustrates the different levels of individual contributions required to obtain 100 percent of the cost of the standard care package. They range from a low of 17 percent in Example 3 to a high of 34 percent in Example 2.

TABLE 1
Individual Contribution Percentages — Partnership Approach

Example	Specified Percentage for Minimum Care	Cost Sharing Above Specified Percentage	Percentage of Cost Paid by Individual
1	50	100	25
2	50	50	34
3	66	100	17
4	66	50	23

The cost of care to the minimum guaranteed level is financed from general revenues. Since England has a modestly progressive income tax system, this is a progressive approach. By requiring additional contributions for higher levels of care, the partnership model draws attention to what individuals are purchasing. However, it is most beneficial to those with high incomes or to those with such low incomes that contribution assistance is provided. For those with incomes in between, the system lacks fairness. The establishment of parameters, both with respect to the minimum guaranteed level of care and with respect to the level of state matching of contributions, is a characteristic of the system that could be useful in controlling costs. The parameters could be changed easily, as the cost of the system and the state's willingness and ability to finance these costs change.

2.3.4 Means Testing

Another method of social insurance to finance state-paid LTC is by way of means testing. In the United States, about half of paid LTC is funded by Medicaid, the joint federal-

state health program for the poor. In most states, to be eligible for Medicaid, an individual is allowed to retain a principal residence and $2,000 in stocks, bonds, bank accounts and other liquid assets (Gleckman, 2007b). In England, there are a number of different allowances, such as Attendance Allowance; however, access to public funding for non-health related institutional care rests on an assets test. People with assets, including housing, over 21,000 pounds cannot access public funding, however great their care and support needs (Glendinning and Bell, 2008).

The advantage of such an approach is that it helps to control costs. Public funds are only spent in situations of true financial need. Criticisms of the system include that it is not only unfair because responsibility for funding and providing social care is a collective, welfare state responsibility rather than an individual, private responsibility but also that it is inequitable regarding the care provided to individuals with comparable disabilities (ibid). Also, the thresholds may be so low that real hardship can occur before any state financing is provided. Moreover, as with any firm threshold, there can be considerable inequity in treatment of those just below and just above the threshold.

The way in which means testing is applied in Scotland provides a model for other countries. As described earlier, nursing care and personal care are provided without charge at point of delivery. However, individuals are expected to pay for their “hotel” costs, those associated with housing and living. However, financial assistance is available with respect to these latter costs for individuals of limited means, i.e., individuals are eligible for assistance if they have less than 21,500 pounds in capital and the extent of assistance depends on the individual’s capital and income (Willpeople, 2010).

3.0 Cost Projections

3.1 International Comparisons

Projections of future costs for LTC require many assumptions, including the extent of care required by the population, how much such care will cost and how much of this care will be provided on a paid basis. Although most developed countries have projections of population growth, it is uncertain what share of the population will require LTC and at what age such care will be required. Moreover, if an objective in making the cost projections is to estimate the amount of public financing required, then assumptions are required regarding the share of care that will be publicly financed in the future. Finally, costs are frequently expressed as a percentage of gross domestic product, which requires projections of GDP.

A number of researchers have developed models to project LTC costs. In this subsection, the projected costs from some of this research are presented for Canada, Germany, Japan, United Kingdom and the United States. In Table 4, the Organisation for Economic Co-operation and Development (OECD) average is shown to provide prospective.

Table 2 shows the total LTC expenditures as a percentage of GDP in 2000.

TABLE 2
Total Long-Term Care Expenditures 2000

Country	Total LTC Expenditures (% of GDP)
Canada	1.29
Germany	1.23
Japan	0.69
United Kingdom	1.4*
United States	1.29

Source: Gibson et al. (2003), Wittenberg et al. (2004)*.

The expenditures quoted are a relatively small percentage of GDP. However, expenditures are projected to increase because of demographics and population aging. In making the projections, various alternative assumptions may be made. Table 3 shows projections for 2000 and 2020 on two assumptions regarding disability rates and de-institutionalization: a dynamic that assumes positive trends and constant trends. Note that the percentages of GDP shown are only in respect to publicly financed care and so are not directly comparable to the figures shown in Table 2.

TABLE 3
Projections of Publicly Financed Long-Term Care Share of GDP

Country	Dynamic Projection 2000	Dynamic Projection 2020	Constant Trends 2000	Constant Trends 2020
Canada	0.74	0.93	0.77	1.14
Germany	0.72	0.90	0.74	1.02
Japan	0.83	1.40	0.86	1.74
United Kingdom	1.06	1.22	1.08	1.30
United States	0.64	0.61	0.68	0.82

Source: Jacobzone et al. (1998).

Table 4 presents projections from 2005 to 2050 for public spending on LTC as a percentage of GDP on two different assumptions regarding how increasing costs will be handled. Cost pressure projects how costs may increase due to increased demand and supply limitations, whereas cost containment projects how such costs might be controlled by government policy.

TABLE 4
Public Long-Term Care Spending Projected to 2050

Country	2005 Base Year (% of GDP)	2050 Cost Pressure (% of GDP)	2050 Cost Containment (% of GDP)
Canada	1.2	3.2	2.4
Germany	1.0	2.9	2.2
Japan	0.9	3.1	2.4
United Kingdom	1.1	3.0	2.1
United States	0.9	2.7	1.8
OECD Average	1.1	3.3	2.4

Source: OECD Secretariat (2006).

A difficulty in assessing the cost projections is that the share of care paid for by government may change over the projection period. For example, for the base years in the tables, the United States has had a significant portion of care paid for privately. With the passing of the CLASS Act that establishes a voluntary federal insurance program for LTC, it is quite likely the share of care paid for publicly will increase.

Similarly, England has been contemplating changes to the care financed publicly. The United Kingdom is comprised of England, Scotland, Wales and Northern Ireland; however, publicly financed LTC services are not the same in all four countries. As previously noted, Scotland provides coverage for nursing care and personal care without charge at point of delivery. It is likely that the other countries of the United Kingdom will adopt a similar approach, according to their own schedule. Hence, the projected costs for the publicly financed care in the United Kingdom are likely to increase. The following paragraphs refer to research that estimates how projected costs may increase in England.

Hancock et al. (2009) provide cost projections for free personal care if England adopted the approach used by Scotland, both with and without assumptions regarding an increase in the fees paid publicly in respect to independent care homes. If the partnership approach, which was described in Subsection 2.3.3, were used to share the costs with the covered individuals, the projected costs would be less than shown in Table 5.

TABLE 5
Public Expenditure for Long Term Care – England

Coverage Scenario	2007 Base Year (% of GDP)	2032 Projection (% of GDP)
Current Funding Arrangement	1.29	2.05
With Free Personal Care	1.46	2.31
With Free Personal Care + Fee Rise	1.47	2.34

Source: Hancock et al. (2009).

All projections depend upon the assumptions made. The figures in Table 5 include an assumption that health and social care unit costs rise by 2 percent per year in real terms (Hancock et al., 2009). In earlier research, many of these same researchers used an assumption that real unit costs of social care and health care would rise by 1 percent a year and 1.5 percent a year respectively (Wittenberg et al., 2004). Although the projection years are not the same, the effect of the assumption that unit costs rise at a lower rate is evident when the figures in tables 5 and 6 are compared. Note that the figures in Table 6 show projections for both publicly financed care and total expenditures.

TABLE 6
Projected Expenditure to 2051 for Long-Term Care – England

Category of Expenditure	2000 Base Year (% of GDP)	2051 Projections (% of GDP)
Publicly Funded – Current Arrangement	0.93	1.20
Publicly Funded – With Free Personal Care	1.09	1.45
Total Expenditures	1.37	1.83

Source: Wittenberg et al. (2004).

The rate of increase in spending for social care and health care has a significant effect on the cost projections. It can be controlled, in part, by government policy. According to Humphries et al. (2010), the 2009 budget report envisages that social care spending would be limited to 0.7 percent per year, in real terms (through 2026). However, Humphries et al. (ibid) calculate that the current social care system for older people alone would need real-term funding increases of 3.2 percent per year to maintain the levels of support provided currently and assuming productivity gains. Without productivity gains, this could increase to 3.7 percent per year, in real terms (ibid). Since the 2009 budget, the Labour government has been replaced by a coalition government (Conservative-Liberal Democrat), which has promised austerity measures. Yet the difference between 0.7 and 3.2 percent annual increases in social care spending is substantial. To close such a gap would undoubtedly change the quality of care provided.

From the various figures quoted, regardless of the assumptions, the publicly funded expenditures for LTC are projected to increase. In percentage terms, the increases are substantial. For example, Table 4 shows from 2005 to 2050 that the percent of GDP spent on publicly financed long-term care for the OECD average will increase by 200 percent from 1.1 to 3.3 percent, if cost pressures are more substantial than cost-containment measures. However, it is noteworthy that the absolute level of publicly financed LTC in 2050, if cost pressures are more substantial then cost-containment measures, are projected to be less than 4 percent of GDP for most developed countries, with the main exceptions being the Scandinavian countries of Denmark, Finland, Norway and Sweden (OECD Secretariat, 2006). In those countries, far more generous programs of state-financed universal LTC are provided.

3.2 International Tax Levels

To assess whether the increase in projected public expenditures on LTC are affordable, it is necessary to examine the level to which tax rates would have to rise. Table 7 shows tax revenues by country for the year 2007. The table shows that different countries have different preferences for how tax revenue is raised, i.e., through taxes on the average worker in the case of Germany or through taxes on incomes and profits in the case of Canada. However, in 2007, the total tax revenue in the countries shown ranged from approximately 28 to 36 percent of GDP. Scotland has tax levels similar to those shown for the United Kingdom.

TABLE 7
Tax Revenues By Country – 2007

Country	Total Tax Revenue (% of GDP)	Taxes on Income and Profits (% of GDP)	Taxes on Goods and Services (% of GDP)	Taxes on Average Worker (% of Labor Costs)
Canada	33.28	16.57	7.85	31.20
Germany	36.17	11.29	10.61	52.60
Japan	28.33	10.31	5.09	29.32
United Kingdom	36.08	14.25	10.52	34.01
United States	28.29	13.87	4.69	29.68

Source: OECD.Stat Extracts.

3.3 Affordability

The level of taxes that the citizens of any country are prepared to pay likely depends on the absolute income of the taxpayers, the level of services received by the taxpayers, and how well the services delivered reduce inequality and are perceived as fair. Moreover, the assessment of the level of taxes that citizens are prepared to pay likely depends on what can be purchased with disposable (after-tax) income and the level of utility such purchases deliver.

The countries under consideration are all developed countries, where absolute income per person is relatively high. In 2001, the GDP per capita in U.S. dollars for these five countries ranged from approximately $36,000 for the United States to $25,000 for the United Kingdom, based on 2001 purchasing-power-parity rates (The Scottish Government, 2003).

Scotland was comparably ranked to the United Kingdom, but its GDP per capita in 2001 was slightly lower at $23,622 (ibid).

As discussed in Subsection 3.0 over the projection period from 2005 to 2050, publicly financed expenditures on LTC may increase by 2 to 3 percent of GDP. In examining the total tax revenue figures in Table 7, an increase of 2 to 3 percent of GDP represents a total tax increase of approximately 10 percent. Given that these are developed countries with very significant levels of GDP, at tax levels of 28 to 36 percent of GDP, a 10 percent increase seems affordable.

How such increased taxes should be collected is a matter for each country to determine. There are cultural preferences regarding the type of taxes acceptable. Without knowing the cultural preferences of Germany, with taxes on average labor costs of 52.60 percent, there is likely to be limited room to raise taxes on labor, without seeing some type of reaction. For example, although the normal retirement age in Germany has been age 65, the average retirement age (when disability and unemployment retirements are included) is less than age 60 (Borsch-Supan and Wilke, 2006). Although Marin (2006) attributes the lower actual retirement age to subsidized actuarial reduction factors, it is possible the generation of tax revenues of over 50 percent on labor costs is a factor when individuals are considering whether to retire.

Another factor to consider in assessing affordability is what other pressures will there be to use tax revenues for other purposes. Most developed countries have aging populations, which will result in increased costs to provide social security pensions and health care. According to Roy (2010), in the United Kingdom from 2007 to 2035, the age-related expenditure is projected to increase by 1.3 percent of GDP for pensions and by 1.2 percent of GDP for health, compared to only 0.3 percent for LTC. In Germany from 2007 to 2035, the age-related expenditure is projected to increase by 1.4 percent of GDP for pensions and by 1.4 percent of GDP for health, compared to only 0.7 percent for LTC (ibid). Hence, there will be other social areas that may place heavier demands on tax revenues than will LTC.

4.0 Other Considerations

There are many assumptions that have been included in the various financial projections. A common one is that there are no significant changes in behavior (such as care patterns, birth rates and living arrangements) from current behaviors. Society is evolving dynamically, so it is highly likely that certain behaviors will change as relative resource scarcities develop. Many of those making projections acknowledge this likelihood. However, it is difficult to make projections to reflect changes in behavior, especially when it is uncertain how and when the behavior will change and not knowing what other consequences will occur as a result of the behavioral change. From a projection perspective, the easiest route is to assume no change in behavior, but to acknowledge that there may be behavioral changes that will affect the results.

In this section, a number of considerations that may lead to behavioral changes, which could have an impact on the projections, are identified. Many of these considerations have already been the subject of extensive research. The purpose of this section is to point out some of these other considerations, rather than to attempt a thorough review of the consideration. These considerations are grouped under four headings: changing demographics, home and community care, care administration and equity release mechanisms.

4.1 Changing Demographics

Most developed countries have aging populations, as a consequence of having had periods when birth rates were below replacement levels and because of increasing life expectancies. Some countries, such as Canada, have a sizable baby-boom generation. The oldest members of the baby boomers are about to reach age 65.

Senior dependency ratios (SDRs) are typically calculated by dividing the number of people age 65 and older by the number of people age 15 to 64. Table 8 shows the SDR in 2005 and the projected SDR in 2030 for certain developed countries. These ratios are already significant, approximately 20 percent in 2005, in countries with older populations such as Japan and Germany. The SDR is expected to rise sharply in many developed countries, e.g., projected to increase from 2005 to 2030 by more than 50 percent in Japan and the United States and by more than 75 percent in Canada.

TABLE 8
Senior Dependency Ratios

Country	SDR 2005 (%)	Projected SDR 2030 (%)	Percentage Increase
Canada	13.078	23.097	76.6
Germany	18.939	27.792	46.7
Japan	20.162	31.825	57.8
United Kingdom	16.003	21.869	36.7
United States	12.432	19.302	55.3

Source: OECD.Stat Extracts.

Scotland is a particularly interesting case. Because of its relatively small population, below replacement birth rates and net migration, its population is projected to increase until 2033, at which point it begins to decline slowly (National Statistics, 2010). Scotland is considered to be aging at a rapid rate. The ratio of its population age 65 and older to the population age 16 to 64 is calculated to increase from 0.252 in 2008 to 0.390 in 2028 and to 0.435 in 2033, based on the most recent population projections (ibid).

A rising SDR is an indicator of potential stresses on the social system. It is a crude indicator of a system's ability to collect taxes to support social programs for seniors, such as LTC. The higher the SDR becomes, the greater the stress on a country's taxpayers. It also is an indicator that more care may be required. As life expectancy increases, there will be larger groups of the very elderly (85 and older). These groups have a higher likelihood of requiring care, show a greater tendency to experience dementia and other cognitive impairments, and are more likely to require institutional care.

In the case of LTC, a rising SDR is an indicator not only that relatively more care may be required but also that the burden of providing care may increase. Traditionally family members provide considerable informal, unpaid care. Ng (2010) states that in the United States, the value of unpaid care is significantly larger than what is spent on paid care. A rising SDR warns of the possibility of resource shortages. There may be more seniors requiring LTC per working age family member. This problem may be exacerbated by smaller family sizes than in the past, as a result of lower birth rates. These factors in combination may result in more hours of care being provided by family members, reductions in the amount of care received by each senior family member, requirements for more formal, paid care to be purchased or some combination of adjustments.

Another demographic change occurring in many developed countries is an increase in the rate of labor force participation by females. Females have traditionally provided more informal long-term care than males. Ng (2010) states that in the United States, women account for 66 percent of all caregivers and female caregivers average 21.4 hours per week in care giving, significantly more than the 17.4 hours per week averaged by male caregivers. With the greater number of females working outside the home in paid employment, how will care be provided to needy seniors and what will be the physical, mental and emotional impact on care providers?

There is a potential positive demographic change with respect to the care burden. In many developed countries, the increase in life expectancy at older ages has been greater for males than for females. This may mean there are longer periods of joint life for married couples, which may mean that more of the informal care burden can be borne by the couple, without requiring more assistance from other family members, or in resorting to purchasing care. Discussing cost projections, Wittenberg et al. (2001) observe that fewer older people living alone reduces slightly projected demand for formal services.

Finally, under the assumption that the rates of disability by age remain constant, increasing life expectancy would suggest an increase in the demand for LTC. However, it is quite possible the population may experience an increase in healthy life expectancy, which would result in a decrease in the rates of disability by age. Not only might a decrease in disability prevalence rates result in a lower demand for LTC but also it might result it a change in the type of care, e.g., resulting in less institutional care. Jacobzone et al. (2000) find evidence of improvements in disability rates among the over age 65 populations in some

countries and in such countries a trend toward de-institutionalization, but conclude the picture is mixed and not comparable across countries. Where there is improvement in disability rates, the projected costs of LTC may be less than projected.

4.2 Home and Community Care

As suggested in the previous subsection, the type of care required and provided may change. Jacobzone et al. (ibid) have noted that de-institutionalization is happening in many countries. MacDonald et al. (2010) observe that the elderly show a strong preference to age in place, i.e., to remain in their homes for as long as possible. With continuing developments in technology and the availability of medical appliances, an increasing number of the elderly with some disability are able to function outside an institution. Not only may this signal an increase in the amount of care provided in the home but also it may indicate a direction for future public spending. Perhaps there will be a greater proportion of public money spent to assist in transforming homes to the needs of the moderately disabled, in providing compensation and support for care in the home by what have traditionally been unpaid workers, and a smaller proportion of public money spent in building institutions and in compensating institutional caregivers. Given the rising SDR in many countries, there may be more dollars spent in aggregate on institutional care than there is today, but the proportion of the total public spending that institutional care represents will likely decrease, due to the change in types of care. The provision of a greater proportion of care at home rather than in an institution is one approach to contain the cumulative increase in LTC costs and is likely to improve the experience of those receiving care.

Another area of care that may receive a greater proportion of public spending is the development of integrated communities for seniors. Such communities would provide convenient access to common services such as hairdressers, grocery stores, post office, medical clinics and meeting places. The convenience would be not only in terms of the physical distance but also in terms of access, e.g., wider doors and hallways, railings and support bars, ramps and elevators instead of stairs, access by way of pushing buttons rather than through bending, holding or pushing. The Scandinavian countries are leaders in the development of such integrated communities (Andrews, 2008). The Netherlands also is a leader in developing a client-centered approach that stresses independence and self-care in an environment integrated with the local community (Gibson et al., 2003).

Although the demographics are such that married couples may enjoy longer periods of joint life and that the strong preference is to age in place, there will still be periods of single survivorship. Typically, these periods will occur at the very elderly ages, a stage when there is an increased likelihood of displaying some cognitive impairment or the need for assistance with one or more ADLs or IADLs. Because of the longer life expectancies of women compared to men, reduced family sizes, and higher ratios of elderly women to female children or grandchildren (Andrews, 2008), care for very elderly women will be an area of increasing attention. For single elderly women (and men) not yet at the stage of requiring institutional care, an integrated community setting may provide an appropriate combination of daily living activities, care provision and easier access to emergency care as needed, in a way that preserves dignity.

4.3 Care Administration

One difficulty in comparing costs of care is not being able to determine if the quality of care is comparable. Few countries have a body responsible for ensuring that the standard of care is of a consistent and acceptable quality. With the possibility of scarcity of caregivers and projected increases in the total amount spent on care, it is possible there will be a reduction in quality. The cost projections assume no change in quality. Given that the current level of quality is not ascertainable, this is a somewhat meaningless assumption. Nonetheless, changes in quality could affect the cost projections, either upward or downward. If there were to be an enforced minimum level of quality, it is likely it would require an increase in quality for some care providers. Such an increase might raise the overall costs. Alternatively, if there is pressure to control the amount spent on care, there might be a reduction in the quality of care provided. In such a situation, the cost projections may overestimate the cost of care.

It is likely there will be a tendency to reduce the use of institutionalization and to encourage more home care. On the one hand, it will be difficult to ensure there is a consistent standard of care with respect to the care provided in home, particularly with regards to care provided by unpaid caregivers. On the other hand, the state may encourage provision of care in home through such measures as compensation for home caregivers, whether in direct compensation or through the provision of benefits, e.g., by providing respite care for a certain period per year to give the caregiver a break or by providing credit within the social security system for time spent in care giving. If the state encourages home care and provides compensation, it may be compelled to monitor and control quality. The impact of possible changes in how care is delivered and administered are difficult to predict and very likely will differ by country.

4.4 Equity Release Mechanisms

In Subsection 2.3.2, it was mentioned that Lloyd (2008) has argued that, in the United Kingdom, the current age group turning 65 are one of the wealthiest age groups of all time because many in that group have owned houses which have increased significantly in value. Lloyd (ibid) argues it would be unfair to implement a publicly funded LTC system for this age group. Instead, this group should be expected to pay the costs of its care, not individually but through a social insurance arrangement. Lloyd (ibid) recognizes that although this age group may have wealth, it may not have the liquidity to pay insurance premiums. (In certain cases, net income may actually decrease due to increased property taxes based on higher assessed property values.) He proposes that individuals in this age group would be assessed at age 65, with respect to their needs and their ability to pay, and a single premium determined in respect to the LTC insurance. However, the individual could opt out or, more interestingly, defer the payment of the premium right up until death, at which time it would be collected from the deceased's estate. A favorable rate of interest would be charged on deferred premiums. This arrangement would permit individuals to remain in their homes and be covered by insurance. It avoids the situation in which individuals are required to sell their homes to pay for their care or insurance.

Writing about Canada, Andrews (2009) observes that the biggest component of many individuals' retirement savings is the equity in their home. It is important to find a mechanism that would permit seniors to age in place and yet have access to the equity in the home. Reverse mortgages are a financial product designed for this purpose. However, Andrews (ibid) shows that reverse mortgages are unfavorably priced, with restrictions on the

amount of equity that can be withdrawn. Andrews (ibid) suggests that a more attractively priced reverse mortgage product could be made available if an agency of the state provided a guarantee against negative equity and the reverse mortgages were pooled with other real estate and infrastructure investments. Pension funds would be the logical holder of such investments. Releasing home equity in this manner would be a way to provide funds to individuals to assist them in meeting their share of LTC costs.

Munnell et al. (2009) discuss the impact on the National Retirement Risk Index, developed for the United States by the Center for Retirement Research at Boston College. Their analysis shows that preserving home equity is slightly more cost effective than taking a reverse mortgage to provide income and pay insurance premiums.

Seniors who wish to age in place may find it necessary to make renovations to their homes to accommodate the adjustments necessary as one's ability to perform the ADLs and IADLs declines. A concern for providers of equity release products is that the adjustments made to the home may reduce the resale value of the home.

In summary, home equity is an asset that could be used by many to pay for some of the cost of LTC. However, most seniors wish to remain in their homes for as long as possible. Reverse mortgages as they are designed and priced currently are unattractive. Finding a method to permit seniors to remain in their homes but to unlock the equity in their homes on a financially and contractually attractive basis would greatly facilitate many seniors ability to pay for long-term care.

5.0 Conclusions

Most developed countries are showing the signs of population aging. One of the visible signs is an increasing number of seniors, some of whom are experiencing reductions in their abilities to perform one or more ADLs or IADLs or who are exhibiting cognitive decline or dementia. Surveys (such as Peter D. Hart, 2005 for the United States or Caring Choices, 2008 for the United Kingdom) indicate that many respondents are concerned about the potential costs of LTC and believe the cost of LTC should be shared by the individual and the government.

Because LTC will only be required by some of the population but the costs of LTC can be significant and financially devastating, insurance is an appropriate product to provide for potential LTC costs. To address the problems associated with adverse selection and to provide coverage to the substandard risks who are some of the neediest, it is necessary that insurance be mandatory. There are social considerations regarding denying or limiting coverage to the (potentially) less healthy and regarding setting premium rates that vary by age and gender, especially in a mandatory program. It is necessary for government to play some role that may range from re-allocating some of the burden of being required to insure the worst risks to financing care through general taxation. In this paper, a mandatory insurance arrangement with the involvement of government in the financing of the insurance is defined as a social insurance; albeit, there are many different ways in which the insurance can be delivered.

As described in Section 4, demographics and other considerations suggest the costs of providing LTC are likely to rise substantially. However, even under the least favorable projections, over the next 40 years, the costs of publicly financed LTC are not likely to exceed 4 percent of GDP, except, perhaps, for the most comprehensive state-financed programs. Hence, even though the aggregate publicly financed expenditures for LTC are likely to increase significantly, they do not represent a large percentage of GDP. An increase in total tax revenues of approximately 10 percent would be sufficient to raise sufficient revenue to pay for projected LTC. The overall levels of tax revenues appear affordable; even with a 10 percent increase (see Table 7).

What a country will decide is affordable is difficult to predict and may change over time. It is affected by the social, cultural, political and economic traditions, as well as a country's history. It is also affected by the other demands on a country's finances. As noted in Subsection 3.3, the costs for pensions and health care are projected to increase more, as a percentage of GDP, than are the costs for LTC. Pensions and LTC are mainly expenditures with respect to seniors, as is a significant amount of health care expenditures. There are issues regarding intergenerational fairness. Each country must decide how much of its tax revenues it will spend on seniors.

Do the foregoing considerations suggest an answer to the question why Scotland implemented free nursing care and personal care after it was recommended in the Sutherland report, yet England considered free personal care unaffordable? Perhaps they do, because demographic and economic considerations do not explain the different positions taken. As noted in Subsection 4.1, Scotland is projected to have a higher SDR than England, which suggests that free personal care will represent a heavier financial burden. Moreover, as noted in Subsection 3.3, Scotland's GDP per capita is slightly less than the GDP per capita for the United Kingdom as a whole. Hence, Scotland is no more likely to be able to afford free

personal care than is England. Perhaps England is more judicious. Reports show that free personal care is placing stress on Scotland's finances (see Audit Scotland, 2008 and Sutherland, 2008). Nonetheless, there is no indication that Scotland is reconsidering its decision that free personal care is affordable; although with most countries in Europe considering austerity measures, it may be a subject of future consideration. Based on the number of reports and research papers, there is considerable evidence that England is considering an expansion of publicly financed LTC.

A substantial portion of the senior population may experience the need for LTC, which may be devastating financially. A mandatory (social) insurance program involving government in the financing is the appropriate way to protect the population from financial distress due to LTC costs. Given the projected cost of LTC, current levels of GDP and tax revenues, developed countries can afford to provide social insurance for LTC.

6.0 Bibliography

Andrews, D. 2008. Living to 100 and Beyond in Canada With Dignity. *2008 Living to 100 and Beyond Monograph*. Monograph M-L108-1. Society of Actuaries. Schaumburg, Ill.

----------. 2009. Requirements to Make the Housing Asset a Viable Retirement Asset. *Housing in Retirement Monograph*. Monograph M-F109. Society of Actuaries. Schaumburg, Ill.

Audit Scotland. 2008. *A review of free personal and nursing care*. Audit Scotland. Edinburgh, Scotland.

Bell, D. and A. Bowes. 2006. *Financial care models in Scotland and the UK*. Joseph Rowntree Foundation, York, U.K.

Borsch-Supan, A.H. and C.B. Wilke. 2006. The German Public Pension System: How it Will Become an NDC System Look-Alike. *Pension Reform: Issues and Prospects for Non-Financial Defined Contribution (NDC) Schemes* (ed. Holzmann, R. and E. Palmer). The World Bank. Washington, D.C. pp. 573 - 610.

Bowes, A. and D. Bell. 2007. Free Personal Care for Older People in Scotland: Issues and Implications. *Social Policy & Society 6:3.* Cambridge University Press, United Kingdom. 435-445.

Burke, S. P., Feder, J. and P.N. Van de Water (eds.). 2005. *Developing a Better Long-Term Care Policy: A Vision and Strategy for America's Future*. National Academy of Social Insurance. Washington, D.C.

Caring Choices. 2008. *The Future of Care Funding Time for a Change*. King's Fund. London, England.

Comas-Herrera, A., Wittenberg, R., Pickard, L. and the European long-term care financing study team. 2003. The future of long-term care expenditure in Europe. *Euro Observer* Vol. 5, No. 2. European Observatory on Health Care Systems. Copenhagen, Denmark, 7-8.

Gibson, M.J., Gregory, S.R. and S.M. Pandya. 2003. *Long-Term Care in Developed Nations: A Brief Overview*. AARP. Washington, D.C.

Gibson, M.J. and D.L. Redfoot. 2007. *Comparing Long-Term Care in Germany and the United States: What Can we Learn from Each Other?* AARP. Washington, D.C.

Gleckman, H. 2007a. Financing Long-Term Care: Lessons from Abroad. *Issue in Brief* No. 7-8. Center for Retirement Research at Boston College. Chestnut Hill, Mass.

----------. 2007b. The Role of Private Insurance in Financing Long-Term Care. *Issue in Brief* No. 7-13. Center for Retirement Research at Boston College. Chestnut Hill, Mass.

Glendinning, C. and D. Bell. 2008. Rethinking social care and support: What can England learn from other countries? *Viewpoint*. The Joseph Rowntree Foundation, York, U.K.

Glendinning, C. and N. Moran. 2009. Reforming Long-term Care: Recent Lessons from Other Countries. Working paper No. DHP 2318. The University of York Social Policy Research Unit. York, U.K.

Goldberg, L. 2009. Long-Term Services and Supports as Part of Health Care Reform Relief for the Invisible Uninsured? *Health and Income Security Brief* No. 12. National Academy of Social Insurance. Washington, D.C.

Hancock, R., Malley, J., King, D., Pickard, L., Comas-Herrera, A. and M. Morciano. 2009. *Paying for Long-Term Care: Potential Reforms to Funding Long-Term Care*. New Dynamics of Ageing Programme. www.lse.ac.uk/collections/MAP2030/docs/MAP2030_HSC%20report%20131109F.pdf

HM Government. 2009. *Shaping the Future of Care Together*. Booklet 295936/ER. DH Publications Online. London, England.

Humphries, R., Forder, J. and J.L. Fernandez. 2010. *Securing Good Care for More People Options for Reform*. The King's Fund. London, England.

Jacobzone, S., Cambois, E., Chaplain, E. and J.M. Robine. 1998. Long Term Care Services to Older People, A Perspective on Future Needs: The Impact of an Improving Health of Older Persons. Working Paper AWP 4.2. Organisation for Economic Co-operation and Development. Paris, France.

Jacobzone, S., Cambois, E. and J.M. Robine. 2000. Is the Health of Older Persons in OECD Countries Improving Fast Enough to Compensate for Population Aging? *OECD Economic Studies* No. 30. Organisation for Economic Co-operation and Development. Paris, France.

Johnson, R.W., Toohey, D. and J.M. Wiener. 2007. Meeting the Long-Term Care Needs of the Baby Boomers: How Changing Families Will Affect Paid Helpers and Institutions. The Retirement Project Discussion Paper 07-04. The Urban Institute. Washington, D.C.

Johnson, R.W., Mermin, G.B.T. and C.E. Uccello. 2006. When the Nest Egg Cracks: Financial Consequences of Health Problems, Marital Status Changes, and Job Layoffs at Older Ages. The Urban Institute. Washington, D.C.

Jones, B. and J. Barnett. 2010. The New Long-Term Care Entitlement. *Brief Analysis No. 707*. National Center for Policy Analysis. Washington, D.C.

King, K. 2004. What is Long Term Care? National Academy of Social Insurance, Washington, D.C.

Lloyd, J. 2008. *A National Care Fund for Long-Term Care*. The International Longevity Centre – UK. London, U.K.

MacDonald, B.J., Andrews, D. and R.L. Brown. 2010. The Cost of Basic Needs for the Canadian Elderly. *Canadian Journal On Aging/Revue canadienne du viellissement*, Vol. 29, Issue 01, pp. 39 – 56.

Malley, J., Hancock, R., Wittenberg, R., Comas-Herrera, A., King, D., Morciano, M. and L. Pickard. 2009. Housing Assets and Long-Term Care in England. Poster presented at the XIXth IAGG World Congress of Gerontology and Geriatrics.

Marin, B. 2006. A Magic All-European Pension Reform Formula: Selective Comments. *Pension Reform: Issues and Prospects for Non-Financial Defined Contribution (NDC) Schemes* (ed. Holzmann, R. and E. Palmer). The World Bank. Washington, D.C. pp. 265 – 292.

Merlis, M. 2004. *Long-Term Care Financing: Models and Issues*. National Academy of Social Insurance. Washington, D.C.

Merlis. M. and P.N. Van de Water. 2005. Long-Term Care Financing: Models from Abroad. *Health and Income Security Brief* No. 9. National Academy of Social Insurance. Washington, D.C.

Munnell, A.H., Webb, A., Golub-Sass, F. and D. Muldoon. 2009. Long-Term Care Costs and the National Retirement Risk Index. *Issue in Brief* No. 9-7. Center for Retirement Research at Boston College. Chestnut Hill, MA.

National Statistics. 2010. *Population Projections Scotland (2008-based)*. General Register Office for Scotland.

Ng, W. 2010. Long-Term Services and Supports: Meeting the Needs of Elders, Families and the Workforce Through Social Insurance. National Academy of Social Insurance. Washington, D.C.

OECD Secretariat. 2006. Projecting OECD Health and Long-Term Care Expenditures: What are the Main Drivers? Economics Department Working Papers No. 477. www.oecd.org/eco

Peter D. Hart Research Associates and American Viewpoint. 2005. Long-Term Care: The Public's View. *Health and Income Security Brief* No. 8. National Academy of Social Insurance. Washington, D.C.

Pickard, L. 2008. Informal Care for Older People by Their Adult Children: Projections of Supply and Demand to 2041 in England. PSSRU Discussion Paper 2515. PSSRU. Canterbury, England.

Roy, A. 2010. Global Demographics: Importance, Impact and Implications. Presentation to the CFA Institute Annual Conference. London, England. amlan.roy@credit-suisse.com

Stallard, P.J.E. and S. Schoonveld. 2009. Actuarial Issues and Policy Implications of a Federal Long-Term Care Insurance Program. Letter to U.S. Senate Committee on

Health, Education, Labor and Pensions. American Academy of Actuaries. www.actuary.org/pdf/health/class_july09.pdf

Sutherland, S. 2008. *Independent Review of Free Personal and Nursing Care in Scotland*. Scottish Government. Edinburgh, Scotland.

Sutherland, S., Clark, J., Goodison, N., Heath, I., Marshall, M., Rayner, C., Ridley, P., Stout, R. and R. Wendt. 2003. Long-term Care: Statement by Royal Commissioners.

The Information Centre. *Royal Commission On Long Term Care (Sutherland Report)*. 2000. RN 00/78. The Scottish Parliament.

The Moran Company. 2007. *Modeling a New Long-Term Care Financing Plan*. www.thelongtermcaresolution.org/documents/moran_final.pdf.

The Royal Commission on Long Term Care. 1999. *With Respect to Old Age: Long Term Care – Rights and Responsibilities*. www.archive.official-documents.co.uk/document/cm41/4192/4192.htm.

The Scottish Government. 2003. *Measuring Scotland's Progress Towards a Smart, Successful Scotland 2003*. www.scotland.gov.uk/Publications/2003/03/17471/22721.

Wanless, D., Appleby, J., Harrison, A. and D. Patel. 2007. *Our Future Health Secured? A Review of NHS Funding and Performance*. King's Fund. London, England.

Willpeople. 2010. Long Term Care. www.willpeople.co.uk/long_term_care_scotland.htm.

Wittenberg, R., Comas-Herrera, A., Pickard, L. and R. Hancock. 2004. *Future demand for long-term care in the UK: A summary of projections of long-term care finance for older people to 2051*. Joseph Rowntree Foundation. York, U.K.

Wittenberg, R., Pickard, L., Comas-Herrera, A., Davies, B. and R. Darton. 2001. Demand for long-term care for older people in England to 2031. *Health Statistics Quarterly* 12 Winter 2001. 5-17.

Wittenberg, R., Pickard, L., Malley, J., King, D., Comas-Herrera, A. and R. Darton. 2008. Future Demand for Social Care, 2005 to 2041: Projections of Demand for Social Care for Older People in England. PSSRU Discussion Paper 2514. PPSRU. Canterbury, England.

Van de Water, P.N. 2010. CLASS: A New Voluntary Long-Term Care Insurance Program. The Center on Budget and Policy Priorities. Washington, D.C.