SOCIETY OF ACTUARIES

Managing the Impact of Long-Term Care Needs and
Expense on Retirement Security Monograph

Can Long-Term Care Protection in Other Developed Countries Provide Guidance for the United States? Germany as an Example

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1.0 Introduction

Long-term care (LTC) is gradually rising in importance on the agendas of countries with aging populations for a number of reasons. As people live longer, the likelihood that some care will be required increases.

Declining fertility rates and longer life expectancy may mean that there are fewer children to share the caring responsibility for aging parents, or that the children themselves may be older and less capable of managing the physical demands of caring.

Moreover, to date, there has been little change to the period of typical employment. In an aging population this leads to longer periods of retirement, which in turn places greater demands on savings and pensions.

Care costs are rising—like the costs of other goods and services—but also because some of the illnesses more frequent in advanced old age, such as dementia, require greater care intensity.

For these reasons, governments in many countries are concerned regarding the adequacy of LTC and the sustainability of LTC programs. This paper provides a method for comparing the adequacy and sustainability of care and support programs for the elderly. LTC is one component of such programs. The comparison examines eight developed countries. It provides information regarding the relative ranking of the care and support systems for the elderly, which may provide guidance to policymakers in the United States. Based on this assessment, policymakers in the United States may consider making changes to the provision of LTC. If so, the paper suggests that the approach to LTC used in Germany may be informative. It discusses some of the relevant features of the German system to provide LTC.

1.1 Outline of Paper

It is common to consider adequacy and sustainability on a program-by-program basis. This is a logical approach. However, it does not address the critical question from the viewpoint of the individual, which is: Will the programs in the aggregate be adequate and sustainable, for me? Nor does it answer the larger question faced by policymakers, which is: Does the whole package of programs deliver adequate care and support, and are they sustainable? My research has focused on these latter questions. I consider the income support for the elderly and whether it is adequate to meet general living expenses, health care expenses and LTC expenses. I also assess the sustainability of programs developed to deliver income, health care and LTC.

In Andrews (2013a) I have developed a method to analyze the adequacy of care and support for the elderly and applied it to six developed countries. In Andrews (2013b) I have developed a method to assess the sustainability of care and support for the elderly and applied it to the same six countries. This paper builds on and extends the previous research.

Countries are at different stages of development. Their prospects for development differ for many reasons due to their cultural, economic and demographic circumstances. I would not dare to suggest that there is a single approach to LTC financing and delivery that is most suited to each country.

I do believe that the risk associated with LTC is most appropriately addressed through insurance. The possibility of requiring care, or not; the intensity of care required; the duration of care; the cost of available care resources; have the potential to seriously derail planned savings and pensions that were otherwise on track. In Andrews (2011) I argue that LTC insurance should be mandatory; non-mandatory private insurance has not worked and is unlikely to work; and a social insurance approach is required.

In the United States consideration is being given to various aspects of the financing and delivery of LTC. A bipartisan commission has released its report stating that Long Term Services and Supports (LTSS) should be an appropriate area for insurance solutions (U.S. Senate Commission on Long-Term Care, 2013).

A recent study published by the Society of Actuaries (O'Leary, 2014) uses the Delphi technique of successive rounds of questions directed to various experts to identify certain ideas around LTC that are preferred. "A significant majority of panelists agreed in both round 2 (81 percent) and round 3 (84 percent) that a social insurance program is a necessary component of a future LTCI system" (ibid., p. 22). Seventy-eight percent of respondents thought mandatory participation was a necessary characteristic of a social insurance program (ibid., p. 23).

Perhaps then what I do in this paper may not seem too radical a solution for the United States. I examine the LTC system in Germany and suggest that it has characteristics that might fit in the United States, which are worthy of consideration. I do not advocate the wholesale implementation of the German system of LTC insurance into the United States.

In analyzing social issues of extreme complexity, especially involving international comparisons, the fuzzy-set methodology is useful. The next subsection describes the methodology used in this paper, including the fuzzy-set methodology. It also reviews some of the methodology described more fully in the earlier papers (Andrews, 2013a, 2013b), to make it easier for the reader to follow the discussion without having to refer to the earlier papers.

Section 2 provides some background on various types of financing and provision in order to make the descriptions of the different programs in different countries understandable.

Section 3 discusses the concept of adequacy. It takes the perspective that adequacy should not be assessed on a program-specific basis but rather on the basis of a combination of income, health and care support. This section builds on the adequacy analysis from Andrews (2013a), but extends it to include the Netherlands and Japan.

Section 4 discusses sustainability, both of continuing current arrangements and of capacity to enhance program sustainability. It presents the sustainability analysis from Andrews (2013b) extended to include the Netherlands and Japan. It summarizes the findings with respect to adequacy and sustainability.

Section 5 considers characteristics of the German system with respect to LTC that the United States might consider. It discusses the possible suitability of such characteristics for the United States. Section 6 concludes.

1.2 Methodology

As explained, this paper relies on my previous work with respect to adequacy (Andrews, 2013a) and sustainability (Andrews, 2013b) of care and support for the elderly. It extends this work by including the Netherlands and Japan in the analysis. The results indicate that the system in the United States is often inadequate and can be seen in Table 3.

On considering other countries analyzed that have more adequate care and support for the elderly, the system for financing and delivering LTC in Germany is selected for further consideration as it has some characteristics that might fit the United States. The approach to LTC in Germany is to use mandated social insurance through the private sector. Both the Netherlands and Japan use a similar approach. It is for this reason that they were selected to extend the analysis.

Extensive discussion of methodology is included in the two papers listed in the previous paragraph. In this paper I have made some minor changes in methodology, which are explained below. The overall methodology is summarized briefly in the remainder of this subsection.

The analysis focuses on the elderly. It considers government-directed approaches to income, health care and LTC. By "government-directed" I mean plans required as a result of government legislation, whether delivered by government or the private sector or some combination, and whether financed fully, partially or not at all by government. But it excludes means-tested benefits. It considers whether the income from government-directed pension sources, such as social security, is likely to be sufficient along with government-directed health care and LTC to cover expected expenses for the remainder of life.

Government-directed income payments may depend on earnings' history. There are many different possible life paths producing a wide range of incomes in retirement. The issue becomes even more complex when we recognize that the life path is affected by family, health, and care status; and that these will likely change over the life path. So, for example, an adequate pension income at retirement may not remain adequate if one requires LTC; or, for example, an inadequate retirement pension while both members of a couple are alive may become adequate once one member of the couple dies. To make an assessment of the adequacy of a country's programs, there would be many possible situations to consider; or one may make some simplifying assumptions.

To simplify, I examine two family compositions: married couple both age 65 to 70 and a surviving female spouse age 85 or older; combined with two care statuses: no care required and one individual requiring institutional care. This results in four model family compositions. Although four family compositions cannot capture the complexity of the financial and care situations the elderly may face, these four family compositions are reasonably representative of states of the elderly: a couple with both members healthy; a couple with one member institutionalized; a surviving female 85 or older healthy; and a surviving female 85 or older requiring institutional care.

I also consider a one-earner profile leading to government-directed retirement benefits. Earnings were considered to be at the average wage for a full career. I assume annual drug

expenses, before provision of government-directed plans of $2,000 for the couple and $1,200 for the single pensioner. I also consider general living expenses, considered to be 53 percent of the average wage for couple and 38 percent of the average wage for single. This is discussed further below.

In the earlier papers (Andrews 2013a, 2013b) the dollar amounts are in Canadian dollars and were converted to the comparable amount in each country's currency, using exchange rates pertaining to 2011, the year of comparison. This brings us to the main methodological differences in this paper.

Since the writing of the previous papers, the Organisation for Economic Co-operation and Development (OECD) has published Pensions at a Glance 2013 (OECD, 2013). This report was used to calculate the pension income by country and as the guide to the average annual income in the country. Since this report converted all countries' average annual incomes to U.S. dollars, U.S. dollars rather than Canadian dollars were used for the calculations in this report. Moreover, Pensions at a Glance 2013 has 2012 values, so this paper has been updated to 2012. The Andrews (2013a) paper was based on 2011 values.

Pensions at a Glance 2013 reports a percentage value for the state pension for both France and the United Kingdom (i.e., England) less than that used in Andrews (2013a). In this paper I have followed Pensions at a Glance 2013.

For the purpose of assessment, general living expenses associated with food, transportation, accommodation, entertainment and taxes are considered to be 53 percent of the average wage for couples and 38 percent of the average national wage for single-person households. These percentages were applied to all countries in the earlier paper (Andrews, 2013a). In this paper the amount calculated using this relationship for the United States was applied to all countries. Also in this paper the housing allowance available to single pensioners in Sweden has been included. These are the final methodological differences.

More detail regarding the assumptions and methodology is available in the earlier papers (Andrews, 2013a, 2013b).

Much work in actuarial science, including this research, may be categorized as social science. Ragin (2000) makes the case that fuzzy-set analysis is often useful in the social sciences, as we are often trying to classify large items with multiple degrees of complexity. Frequently the item classified will be neither completely in the category nor completely out of the category. Fuzzy sets are a way of recognizing this richness and complexity.

At the time I applied fuzzy-set methodology I thought that this was the first time it had been used in actuarial science. Later in 2013 the Casualty Actuarial Society, Canadian Institute of Actuaries and Society of Actuaries published the results of a study on risk assessment and decision-making (Shang and Hossen, 2013). That study provides the following comparison of fuzzy-set and traditional-set logic.

"The fundamental difference between traditional set theory and fuzzy-set theory is the nature of inclusion of the elements in the set. In traditional sets, an element is either included in the set or

is not. In a fuzzy set, an element is included with a degree of truth normally ranging from 0 to 1. Fuzzy logic models allow an object to be categorized in more than one exclusive set with different levels of truth or confidence. Fuzzy logic recognizes the lack of knowledge or absence of precise data, and it explicitly considers the cause-and-effect chain among variables. Most variables are described in linguistic terms, which makes fuzzy logic models more intuitively similar to human reasoning. These fuzzy models are helpful for demystifying, assessing and learning about risks that are not well understood." (ibid.)

For analytical purposes, I wish to assess and compare the adequacy and sustainability of support and care systems for the elderly in different countries, by applying a single label. With such complexity of programs and statuses, it is likely that the single labels will apply to a range of possibilities. The fuzzy-set methodology is well-suited to such analysis.

As is explained in the earlier papers (Andrews, 2013a, 2013b) and will be outlined in this paper for each component on which adequacy is assessed, a range of possibilities is considered and the outcomes assigned a value between 0 and 1. Zero means that the outcome is completely out of the set considered and 1 means that outcome represents full membership in the set. Most outcomes will be either partially in or partially out of the set. The score over all components is determined for each country, and once again the fuzzy-set methodology is used to select a single label for a country. The same process is used to assess sustainability, but the components differ from those used to assess adequacy.

2.0 A Mix of Financing and Providers

This section provides a brief summary of methods of financing and providing LTC, in order to facilitate the subsequent discussion in this paper. The Institute and Faculty of Actuaries has published studies with respect to international comparisons of LTC financing and provision. See, for example, Andrews and Power (2011) and Elliott et al. (2014). These studies provide much more information and many useful comparisons.

2.1 Financing

It is typical to distinguish between private and public financing. Private financing includes self-funding, in which the individual's or his family's funds are used to pay for LTC. It also includes private insurance.

Public financing refers to a program established in response to legislation or provided by government. It may be financed entirely by general taxes or may include specified contributions, premiums or taxes. The private sector may be involved in the delivery of the program.

Publicly financed programs may provide coverage to anyone meeting the care requirements regardless of income or assets; or they may prescribe means testing, which may specify thresholds of income, assets, or some combination of the two, below which an individual must be to be eligible.

Given the wide range of circumstances with respect to care requirement and the significant cost associated with providing care in every circumstance, all developed countries have a mixture of private and public financing. However, the mixture differs by country.

Andrews and Power (2011) show a range for 10 countries studied. Norway has a system that is largely state-funded. The U.K.'s system is state-funded for those of low income and no assets. In the United States there is a large private insurance market based on international comparisons, yet low participation (Gleckman, 2010). Care is largely self-funded, but Medicaid provides care to those on very low means (ibid.). Galston (2012) argues that Medicaid may reduce demand for private insurance.

Have et al. (2013) classify national public health care systems by source of funds. They identify three models: government-service, national-insurance, and mandated-private-insurance. A similar classification might be applied to a nation's main method of delivering publicly funded LTC, although, for many countries, self-funding plays a much larger part for LTC than it does for health care.

2.2 Provision

With respect to care provision it is typical to distinguish between institutional and domiciliary care. There is significant variation among institutions that deliver care, ranging from primary care facilities such as hospitals, to chronic care facilities such as retirement homes and care homes. Care recipients may be moved from one type of institution to another, depending on the type of care required and the expected duration of care.

With respect to other than primary-care institutional-care, the distinction is generally made between "hotel" services and care services. The theory is that the individual receiving care would have to be living somewhere and would be eating meals. The institution housing and feeding the individual is playing, at least partially, the role of hotel.

Domiciliary care is delivered in the home where the individual resides, typically the family home. It may require modification to the home setting and may be delivered in part by professional caregivers, but usually involves at least some care delivery by family members.

Most surveys find that there is a common belief that LTC provision, at least for some care requirements, is the responsibility of the individual's family. O'Leary (2014, p. 13-14) reports that 84 percent of respondents in round 2 and 86 percent in round 3 agreed that the system should be designed to consistently incent household and family involvement, i.e., household and family involvement should be a component of a national solution.

Countries make different decisions regarding the extent to which LTC is separate from or part of health care. This is often reflected in the government administration where social care is a different ministry from health care. In institutional settings requiring high care intensity, such as an acute care hospital, the country's health care system may cover most of the costs of medication, nursing and physiotherapy. However, in other settings LTC may be seen as different from health care. These differences often mean that care delivery is not seamless, which can be frustrating for the individual, the family, and care providers.

There are many different circumstances regarding care requirement and different settings in which care can be delivered. Care may be required for those unable to perform a few activities of daily living (ADLs) and by those unable to perform any ADLs. It may be required by those physically capable but suffering from mental illness or dementia to those physically incapacitated. Care may be delivered in the home or in an institution. There are many alternative states in between these extremes. Such factors contribute to the difficulty in determining the extent to which an entire system of care provision is adequate.

3.0 A Broader View of Adequacy

3.1 What Constitutes Adequacy?

There are many possible definitions of adequacy. Some of these possibilities are discussed in Andrews (2013a). This paper assesses government-directed programs that do not require means-testing as fully adequate in the following circumstances: If an individual who earned the average wage for a full career could cover the expected living expenses of himself and his family for the balance of their life; having considered the possibility that one member of the family will require institutionalized care at some point. So, for example, an individual in the United States who required LTC to be paid by Medicaid, which is a program with income and asset requirements, would not be considered to have fully adequate support.

It could be argued that this definition is too high a standard. Perhaps individuals with earnings at the average wage should be expected to have additional savings to supplement the government-directed programs. It could be argued that this definition is too low a standard. Perhaps individuals with earnings below the average wage should expect that the government-directed programs will provide adequate care and support. This paper is not the forum for such debate.

However, a critical component of this analysis is that adequacy is considered with respect to a combined set of needs for income, health and LTC. As such, this paper differs from those that focus on the adequacy of a specified program, such as social security, health care or LTC by itself. LTC provision is considered only at an institutional level in measuring adequacy. However, by considering demographic ratios and the projected changes therein in the assessment of sustainability, the capabilities of families to provide non institutional care is considered implicitly.

3.2 Results of Adequacy Analysis

An assessment of adequacy is made for each of the four model family compositions, which are abbreviated as couple not requiring LTC (C.N.), couple with one member requiring LTC (C.Y.), single female not requiring LTC (S.N.) and single female requiring LTC (S.Y.). For this purpose, the technique of fuzzy sets (Ragin 2000) is used. Each of the four family compositions was assigned a raw fuzzy-set score and label as shown in Table 1. The score depends on the extent to which the state pension (S.P.) is sufficient to cover total expenses (T.E.). Total expenses are comprised of general living expenses (GLE), and drug and care expenses.

Table 1. Method of Scoring the Adequacy for Each Family Composition

Comparison	Score	Label
S.P. < 50% GLE	0	Completely inadequate
50% GLE ≤ S.P. < 100% GLE	0.33	Somewhat inadequate
100% GLE ≤ S.P. < T.E.	0.67	Somewhat adequate
100% T.E. ≤ S.P.	1	Completely adequate

Since the objective is to make an evaluation of adequacy at the country level, the individual assessments of adequacy for the four family compositions are averaged to obtain a single overall score. This overall score could range between 0, completely out of the set of adequate social protection, to 1, completely adequate social protection; however, many other scores between 0 and 1 are possible, which indicate that social protection is somewhat but not fully adequate. For the purpose of referring to these scores, the following language will be used.

Table 2. Method of Summarizing Country's Scores and Label

Overall Score	At Least 1 Raw Score of 1	Label
0	No	Completely inadequate
0.20> score >0	No	Mainly inadequate
0.40> score >0.20	No	Often inadequate
0.40> score >0.20	Yes	More inadequate than not
0.60> score > 0.40	No or Yes	Not adequate or inadequate
0.80> score > 0.60	No	More adequate than not
0.80> score > 0.60	Yes	Often adequate
1> score > 0.80	Yes or No	Mainly adequate
1	Yes	Completely adequate

The following table summarizes the calculations for the four family compositions for each country, showing the raw score as specified in Table 1, the overall score and the applicable label, as specified in Table 2.

Table 3. Summary of Results and Assignment of Label

Country	Label	Index Score	C.N. Score	C.Y. Score	S.N. Score	S.Y. Score
Canada	Not adequate or inadequate	**0.42**	**0.67**	**0.33**	**0.33**	**0.33**
England	Mainly inadequate	**0.17**	**0.33**	**0**	**0.33**	**0**
France	Not adequate or inadequate	**0.50**	**1**	**0.33**	**0.33**	**0.33**
Germany	Often adequate	**0.67**	**0.33**	**1**	**0.33**	**1**
Japan	Often adequate	**0.67**	**0.33**	**1**	**0.33**	**1**
Netherlands	Completely adequate	**1**	**1**	**1**	**1**	**1**
Sweden	Completely adequate	**1**	**1**	**1**	**1**	**1**
United States	Often inadequate	**0.25**	**0.33**	**0**	**0.33**	**0.33**

The systems of the Netherlands and Sweden are labeled completely adequate and those of Germany and Japan often adequate. Sweden provides a comparatively high state pension and a universal LTC at little cost to the user. The Netherlands has both a basic state pension and a compulsory occupational pension that results in a relatively high total pension. Germany, Japan and the Netherlands all have a similar type of mandatory insurance for LTC. This is discussed later in this paper. In Canada, England and the United States the designers of the system may have decided that only limited benefits should be provided by the social security and government-provided programs to reflect or encourage a belief in the responsibility of the individual and his or her family for making adequate provision for future needs. Esping-Andersen (1990) has written the classic text on this subject and categorizes the systems by design philosophy.

4.0 Sustainability Considerations

4.1 Defining Sustainability

To assess whether a set of programs is sustainable it is appropriate to determine whether the existing programs could continue for the long term without requiring any changes to benefits or financing. This raises the question of how long the long term is.

Most developed countries use some form of pay-go funding for their social security income program. Some countries maintain higher reserves than others. Typically assessments of these social security income programs are made over a long-term horizon; such as a period of 50 years in the case of the Quebec Pension Plan, 75 years in the case of the Canada Pension Plan and U.S. Social Security, or an even longer period, as is the case in Japan. This research does not specify the period of assessment but accepts as appropriate the period used by the country for the assessment of its own programs.

One might conclude that current programs are unsustainable in the long term, but conclude that a sustainable program is possible. If the country has the fiscal capacity to change the financing to make the current program feasible for the long term, then the program may be sustainable. This leads to the distinction between current sustainability and potential sustainability, which is used in this research.

A set of programs might also be judged unsustainable if it is projected to require too much of the country's resources to be allocated to that program area to the detriment of other areas. There has been concern expressed that this may be the case with respect to aggregate spending on health care in the United States, which has continued to rise, reaching 17.9 percent of gross domestic product (GDP) in 2012 according to the World Bank (2014).

These considerations are incorporated in the components used to construct the sustainability index, as described below. Sustainability is assessed in two ways: whether the plans in their current state were sustainable; and the extent that the country had flexibility or potential to make the plans sustainable in the future. To assess both measures of sustainability, the following scale and labeling system is used.

Table 4. Sustainability Labels

Index Score	Label
0 – 0.20	Unsustainable
0.21 – 0.40	Likely unsustainable
0.41 – 0.60	Possibly sustainable
0.61 – 0.80	Likely sustainable
0.81 or higher	Sustainable

4.2 Results of Sustainability Analysis

4.2.1 Method of Determining Current Sustainability

Whether a current system of expenditure is sustainable is dependent on whether the contribution rates are stable over the long term and are able to provide the promised benefits and also on whether the share of GDP consumed to deliver such benefits leaves room for the rest of the desired services to be provided. As explained in Andrews (2013b), to determine current sustainability an index is constructed from an assessment of the stability of the current contribution rates for social security based on published reports, and the percentage of GDP being spent on health care. The following scoring system was used for each component. The average score is the index value that was entered into Table 4 to determine the label with respect to current sustainability.

Table 5. Current Sustainability Components

Score	Social Security Funding Likely to Be Stable over Long Term	Health Care Spending as a % of GDP
1	**Yes**	**Less than 10**
0.5	**Possibly**	**10.0 – 14.9**
0	**No**	**15.0 or more**

So, for example, the United States is scored as 0 on both measures. According to Table II.D2 in the 2014 report, the OASI fund shows an annual shortfall in actuarial balance of 2.55 percent of taxable payroll (The Board of Trustees, Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, 2014), so the current contribution rate is not sustainable for the long term if the scheduled benefits are to be delivered in full. The U.S. expenditure on health care has exceeded 15 percent since 2008 (OECD, 2014).

4.2.2 Method of Determining Potential Sustainability

As explained in Andrews (2013b) to determine an assessment of potential sustainability, the following three components were assessed: old age support ratio (OASR), total tax revenue, and expenditure on public pensions. OASR and public pension expenditure each contained three subcomponents, as explained in Andrews (2013b). Each component received a score out of 1 after applying the assessment scales shown in Tables 6, 7, 8 and 9.

The index was calculated as the average of the scores on the three components. The label assigned to potential sustainability was determined by entering Table 4 with the index score.

Table 6. Level of OASR Assessment Scale

OASR (in 2008 or 2050)	Score
4 or higher	1
3.0 – 3.9	0.75
2.0 – 2.9	0.5
1.5 – 1.9	0.25
Less than 1.5	0

Table 7. Change in OASR Assessment Scale

OADR 2050 Divided by OADR 2008	Score
60% or higher	1
50% – 59%	0.67
40% – 49%	0.33
Below 40%	0

Table 8. Tax Level Assessment Scale

Total Tax Revenue as % of GDP	Score
Less than 30%	1
30% – 34.9%	0.8
35% – 39.9%	0.6
40% – 44.9%	0.4
45% – 49.9%	0.2
50% or higher	0

Table 9. Public Pension Expenditure as a Percentage of GDP Assessment Scale

Public Pension Expenditure as a % of GDP	Score
Under 5	1
5.0 – 8.5	0.75
8.6 – 11.5	0.5
11.6 – 14.9	0.25
15 or higher	0

4.2.3 Overall Sustainability Assessment

The component scores, index score, and sustainability assessment with respect to the current situation are shown in the following table.

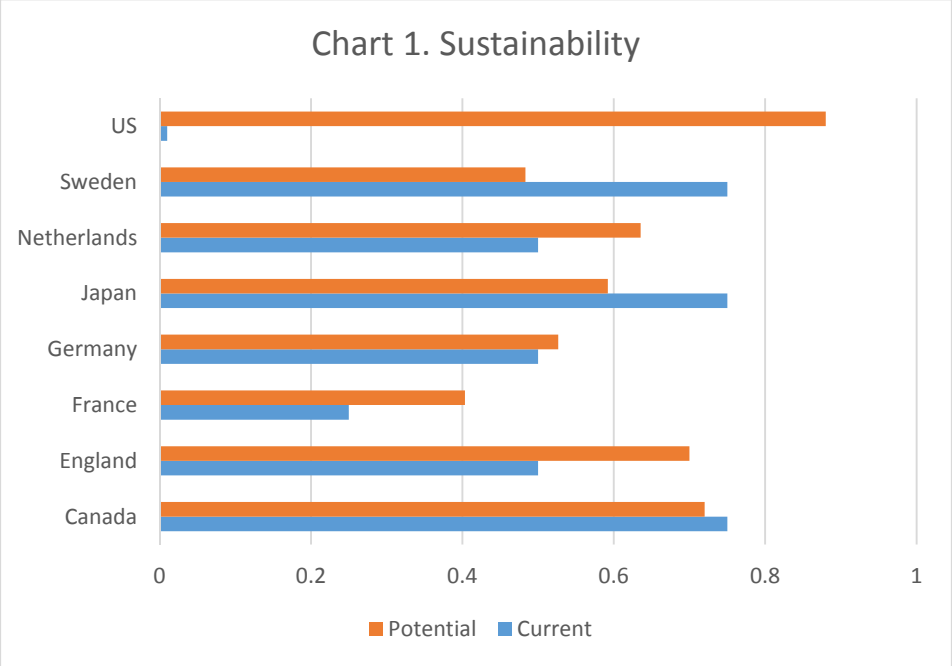
Table 10. Assessment of Current Sustainability by Country

Country	Label	Index Score	SS Stability	HC Spending
Canada	**Likely sustainable**	**0.75**	**1**	**0.5**
England	**Possibly sustainable**	**0.5**	**0.5**	**0.5**
France	**Likely unsustainable**	**0.25**	**0**	**0.5**
Germany	**Possibly sustainable**	**0.5**	**0.5**	**0.5**
Japan	**Likely sustainable**	**0.75**	**0.5**	**1**
Netherlands	**Possibly sustainable**	**0.5**	**0**	**1**
Sweden	**Likely sustainable**	**0.75**	**1**	**0.5**
United States	**Unsustainable**	**0**	**0**	**0**

The composite score for each component, the index score calculated as the average of the component scores, and the label summarizing the potential for adjustment to make the programs sustainable are shown in the following table.

Table 11. Assessment of Potential Sustainability by Country

Country	Label	Index Score	OASR	Tax Revenue	Public Pension Expenditure
Canada	Likely sustainable	**0.72**	**0.61**	**0.8**	**0.75**
England	Likely sustainable	**0.70**	**0.75**	**0.6**	**0.75**
France	Likely unsustainable	**0.40**	**0.56**	**0.4**	**0.25**
Germany	Possibly sustainable	**0.53**	**0.56**	**0.6**	**0.42**
Japan	Possibly sustainable	**0.59**	**0.28**	**1**	**0.50**
Netherlands	Likely sustainable	**0.64**	**0.72**	**0.6**	**0.58**
Sweden	Possibly sustainable	**0.48**	**0.75**	**0.2**	**0.50**
U.S.	Sustainable	**0.88**	**0.64**	**1**	**1**



The combination of the current assessment of sustainability and the potential for making the programs sustainable is interesting and shows some stark contrasts. See Chart 1. The assessment of the current situation in the United States is that the programs are completely unsustainable, but the good news is that the United States has greater potential to make its programs sustainable than any other country. The reason that the programs are unsustainable is

that the current funding rate for Social Security is insufficient to provide full benefits over the actuarial projection period of 75 years in combination with a very high level of expenditure on health care, well in excess of 15 percent of GDP. However, overall the tax burden is relatively very low in the United States and the commitment to public pension expenditure currently and on a projected basis is relatively low, so there is significant fiscal capacity. The aging of the U.S. population through 2050, as measured by the OASR calculations, is not as extreme as that experienced by some of the other countries. The component inputs for the United States are tax revenue as a percentage of GDP: 24.3 in 2012 (OECD, 2014); OASR in 2008: 4.74 projected to decrease to 2.53 in 2050 (OECD, 2013); public pension expenditure as a percentage of GDP, actual in 2010 and projected for 2030 and 2050: 4.6, 4.9 and 4.8, respectively (ibid.).

As noted earlier, the OASR and the change in OASR between 2008 and 2050 provide an implicit measure of the capacity a country has to deliver LTC by using family members. When OASR is less than 2, any LTC care may have to be borne by a small number of family members. When there is a significant decline in OASR between 2008 and 2050 a LTC support system founded on family support may face challenges. Family support for LTC may have been a viable approach at the beginning of the period but may not be nearly as viable at the end of the period. But attitudes regarding the responsibility for family members to provide care may not change among those requiring care as quickly as the ratios change. In the case of Japan, it faces both a low projected OASR in 2050 of 1.2 and a dramatic decrease in OASR from 2.8 in 2008. It results in a score of 0.28 on the OASR component of potential sustainability (see Table 11).

Canada, Japan and Sweden fare reasonably well on the sustainability measures. These countries' programs are assessed as likely sustainable in their current state. Canada is considered to have more potential to make its programs sustainable in the future. As discussed above, Japan's low value on the OASR component indicates the burden of the old age population on the small base that has to support them. This poses the greatest threat to its programs' sustainability.

On the current measure, England's, Germany's and the Netherlands' programs are possibly sustainable. However, with respect to potential sustainability, England is better placed than the others. England has more favorable demographics as measured by the OASR component and less commitment to public pension expenditures.

France faces a difficult situation. On the current measure, its programs are likely unsustainable and its potential to make adjustments is limited; so on the potential measure it is assessed as being likely unsustainable. France has significant commitments to public pension expenditure that will constrain flexibility.

4.3 Combining Adequacy and Sustainability

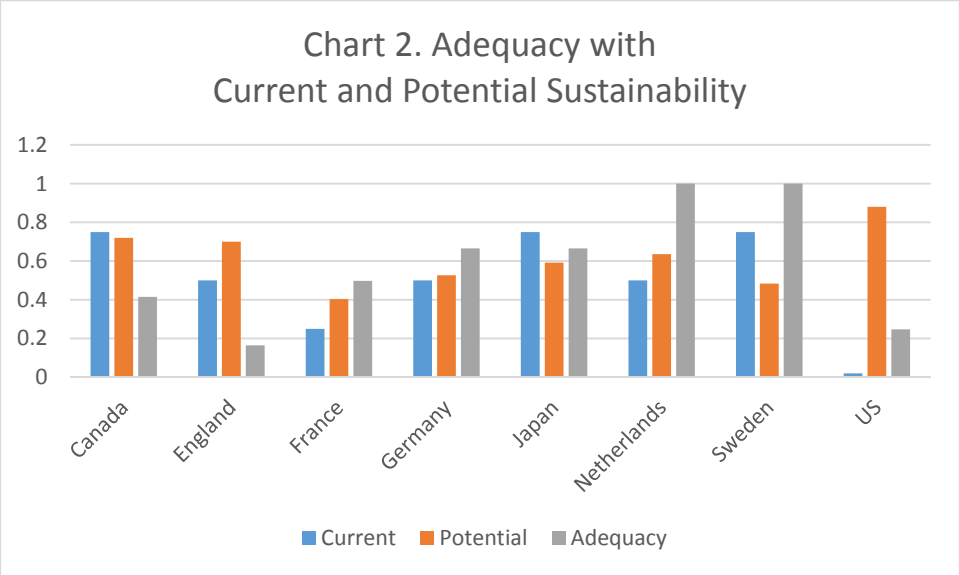


Chart 2 shows that England and the United States have programs that are mainly inadequate or often inadequate, respectively. However, the situation with respect to current sustainability differs. In England the programs are possibly sustainable, whereas in the United States they are unsustainable. Both countries have strong potential for sustainability. The potential for sustainability is very strong in the United States because of its relatively low levels of taxation, its relatively low public pension commitment, and its more moderate rate of aging. But there is strong resistance to tax increases in the United States, so whether this potential can be realized is debatable. Moreover, this paper expresses no opinion with respect to the appropriate order of priorities for the United States, whether it be to improve adequacy, enhance current sustainability, or some combination of these two. Nor does it express an opinion on which program presents the highest priority for reform.

The Netherlands and Sweden provide a contrast to these two countries. Their programs are completely adequate. On the current measure of sustainability, they are likely sustainable for Sweden and possibly sustainable for the Netherlands. On the potential measure of sustainability, these labels are reversed for the two countries. An immediate reaction might be to scoff at Sweden because of its welfare state—that such a situation could not be implemented elsewhere. But the evidence suggests that the Swedish welfare state is changing—to improve productivity and to incorporate private companies in the delivery of public services (Schumpeter, 2013).

Among the European countries studied with a substantial welfare state (Sweden, the Netherlands, Germany and France), it is not Sweden that is the concern, but France. Both its current and potential sustainability are considered likely unsustainable. Moreover, France's programs are labeled as not adequate or inadequate, which is a lower ranking than in the other European countries. Because France shares a common currency with Germany and the

Netherlands, it may face a painful adjustment if it decides to try either to make the programs more adequate or to improve their sustainability without reducing adequacy.

Like France, the adequacy of Canada's programs is not adequate or inadequate. Unlike France, Canada's programs are assessed as likely sustainable on both current and potential measures. Canada's retirement program philosophy is to provide considerable room for individual saving and employer-provided pension plans. There is a growing divide in pension plan coverage between public sector workers, with coverage, and private sector workers without access to defined-benefit pension plans. If individual savings play the role contemplated by the philosophy, then the status quo may continue. However, if individual savings are inadequate then there will be pressure to improve the adequacy of the coverage. This could prove challenging for governments if some workers have adequate coverage and others do not. There will not be a one-size-fits-all solution. The positive aspect is Canada's position with respect to sustainability gives it flexibility to adapt.

Japan represents the middle case. The adequacy of its programs is labeled often adequate. The programs are likely sustainable on a current basis and possibly sustainable on a potential basis. Japan's rapidly aging and soon-to-be-shrinking population has the greatest impact on its programs' sustainability.

5.0 Does the German Approach Fit the U.S. Context?

To answer the question: "Does the German approach fit the U.S. context?" it is necessary to examine components of the German approach. Germans can expect higher replacement rates from social security than can Americans. This contributes to the assessment of the German programs as often adequate. U.S. Social Security faces the prospect of benefit reductions and there are many proposals for change. This is not the forum to discuss changes to U.S. Social Security.

The German system provides comprehensive health care to its citizens, although for the elderly U.S. health care is broadly comparable. Through Medicare the United States has a universal program for those age 65 and over that covers a wide range of medical and health services. With Medicaid and the continuing implementation of the Affordable Care Act (ACA), the United States is extending the universality of a minimum level of basic health coverage. Since the majority of individuals requiring LTC are age 65 or over, the adequacy of the health coverage components for the U.S. system is moving in the direction of rough equivalency to that of the German system for the main group of LTC recipients.

The following subsection examines interesting features of LTC insurance provision in Germany. LTC insurance provision in Japan and the Netherlands has many similarities to the German approach. That subsection considers how well such features might fit the United States.

5.1 Features of LTC Insurance in Germany

In Germany, LTC insurance is a social insurance (Gleckman, 2010). Coverage is mandatory. The insurance is provided by private-sector insurers or funds. It is financed almost entirely by

contributions and premiums, but is delivered on a pay-as-you-go basis. Contributions are income-dependent and shared equally between the employee and the employer. Pensioners must contribute the amounts themselves. Contributions from the unemployed are covered by the unemployment insurance. Childless members pay an additional contribution of 0.25 percent. The covered benefits are mandated.

Individuals earning approximately 50,000 euros or more per year may elect to participate in a private LTC insurance, instead of the social insurance. But it is not possible to opt out of coverage completely. The private LTC insurance must provide benefits at least as great as the social insurance. Insurance premiums may be based on gender, age and other rating factors.

The mandated benefits under the social insurance are divided into three care levels, which differ based on the assessment of the inability to perform ADLs and instrumental ADLs, and the length of time needed in support by a non-professional caregiver. According to Zuchandke et al. (2010), the mandatory benefits provide home care and nursing home care for people with a medically approved need without regard to age or financial status and without requiring a means test. The benefits are fixed at a monthly maximum per eligible person and are determined by illness/disability level and the setting. The benefits may be paid in cash or kind, at the choice of the recipient; although in-kind benefits are more valuable than cash benefits to provide an incentive to elect in-kind care (Bloomqvist and Busby, 2012).

5.2 How Would Such Features Fit in the United States?

The German system with respect to LTC is mandatory social insurance, but this insurance is provided by the private sector. It is unlikely that any social insurance that is mandatory will find unanimous acceptance in the United States in the current political environment (O'Leary, 2014, p. 26). But over 80 percent of respondents agreed that social insurance is required (ibid., p. 22) and 90 percent agreed that they could accept social insurance as part of a compromise toward a comprehensive reform of the LTC system (ibid., p. 22). Seventy-eight percent agreed that mandatory participation is a necessary characteristic of social insurance (ibid., p. 23).

Insurance provision by the private sector would likely be better received in the United States than provision by government; although both models exist to some extent in the United States with respect to health insurance, as evidenced by the co-existence of private insurance in response to the ACA and Medicaid.

In Germany, the principle is that LTC insurance follows health insurance (Schulz, 2010), so individuals purchase LTC insurance from their provider of public health insurance. Once the ACA is fully implemented in the United States, this might be a reasonable extension to consider. However, it is unlikely that all the insurance carriers providing health insurance in the United States will wish to also provide LTC insurance. Hence, implementing the German principle in the United States would be administratively difficult. It could be accomplished through the reinsurance market, but it seems unnecessary unless there were too few private insurers willing to offer LTC insurance.

In the German system those of higher incomes may seek private insurance, at least as extensive as the publicly mandated insurance. But this insurance can be subject to more rating

classifications traditionally associated with private insurance provision. The features of opt-out for higher income earners and the use of more traditional rating classifications would also likely find some acceptance in the United States, especially among those who favor choice and private market solutions.

The use of identifiable premiums or contributions paid by individuals and employers would be more likely to gain support than would the use of general taxation. However, they would be seen by some as new taxes. As such, the program that required them would be opposed.

The financing formula in Germany makes a higher assessment on those age 23 and older without children (ibid.). The rationale is that care provision is affected by demographics. Those without children may place greater care requirements on the state. Such logic may not appeal to all Americans, some of whom would likely consider it unfair, discriminatory or offensive on libertarian grounds.

In Germany as with the United States, the responsibility for LTC rests at the province or state level, not at the federal level. This leads to complexity and has the potential for different outcomes in different parts of the country. In Germany the federal government took legislative action. Similar action by the U.S. government would be likely to meet resistance from various states and individuals. O'Leary (2014, p. 27) reports that two-thirds of panelists supported a Medicare-supplement-style program for LTC insurance. That is a federal-government-sponsored LTC insurance, which left gaps for private insurance to fill.

The German system provides a basic level of insurance for all, according to their assessed care needs. In this regard it is adequate. But with demographic change there are questions regarding its sustainability. Schulz (2010) states that the care requirements of a population with an increasing number of old people, and the increased care requirements of the very old in respect of multi-morbidity and mental illness, will make financial sustainability more challenging. She also notes that the delivery of quality care is dependent on the supply of qualified caregivers. In Germany, there is an expected shortage of nurses. The United States might face similar issues. Moreover, since the system operates on a pay-as-you-go basis, it is likely that contributions will rise over time. It would be desirable to set the contribution rate at a level that would be expected to be able to be maintained for many years and which would provide adequate profit and risk margins for insurers to operate.

A feature of the system is the option for recipients to choose between cash and in-kind benefits. By pricing the in-kind benefits to be more valuable than the cash benefits there is an incentive to elect in-kind benefits. Bloomqvist and Busby (2012) state that competition (e.g., through choice in the form of benefits) can provide producers with an incentive to operate more efficiently and to offer higher-quality services.

Galston (2012) has presented two alternative approaches to reform the U.S. system for LTC. One of the alternatives would be to adapt the German system to American circumstances. He proposes a two-tier approach, in which workers over age 50 would remain in the current system but all workers 50 and under would be required to contribute 2 percent of their wages

into an LTC fund or purchase private LTC coverage that included specified coverage features, similar to the German system. One coverage requirement would be that the policy offered no less than five years of coverage. The federal government would assist with contributions for lower-income workers. The government would establish eligibility criteria for companies to participate in the new program's exchanges.

Galston (ibid.) sees a number of problems with the way that LTC is delivered in part by both Medicare and Medicaid, such as Medicaid may decrease demand for private insurance, Medicaid imposes strict income and asset requirements for participation, and the financial viability of these programs as the population ages and care requirements increase. The proposal in the foregoing paragraph is designed to address some of these problems. A new source of funding would be mandated. During the five-year coverage period of the mandatory insurance there would be no income or asset requirements. After five years, Medicaid could be a payer of necessity.

Galston (ibid.) calls for an independent LTC actuarial commission to evaluate the program's financial soundness and recommend whatever changes it deems necessary to ensure long-term sustainability, every five years. He proposes an automatic balancing mechanism involving changes in benefits or payroll taxes, if Congress failed to act within a specified time frame. This would help to address the potential financial inadequacy that may occur in a pay-as-you-go system.

In this section I have presented characteristics of the German system of LTC insurance. I have commented on the likelihood of acceptance of similar characteristics if implemented in the United States. Some of my comments are based on O'Leary's research (O'Leary, 2014). It is important to note some qualifications regarding that research. First, few statements receive unanimous support. It is impossible to assess the strength of opposition by those who did not support a statement. Second, the panelists were experts in the LTC area. There is no reason to believe that the views of experts would be the same as those of the general population, who might be required to vote for (politicians who vote for) such changes. Third, the report contains variations on similar questions and multiple rounds of opinion gathering, so there is room for interpretation of the results.

6.0 Conclusion

The lack of a comprehensive solution to the challenges arising with respect to LTC, currently and to come in the future, is gaining increasing prominence for policymakers in countries with aging populations. The concern regarding LTC issues is rising in the United States. The approaches to address these challenges vary considerably by country. This paper has examined the adequacy of the approaches adopted in a number of developed countries. The definition of adequacy extends beyond care requirements to include income in old age and the affordability of health care.

Each country has its own social, economic and cultural context. It is unlikely that the approach adopted by any one country could be lifted directly without change to another country

and found to be completely satisfactory in the second country. However, those countries with mandatory LTC insurance, whether privately or publicly delivered, have the most adequate programs. The risks associated with LTC are insurance risks, as discussed at length in Andrews (2011).

This paper finds that the approach used in Germany is often adequate and possibly sustainable. Moreover, its use of the private sector for the provision of LTC insurance is a model more likely to gain acceptance in the United States than an approach that involves government-run insurance. The mandatory care requirement with an opt-out provision for wealthier citizens ensures coverage for the needy, greater flexibility for the wealthy, and may gain broader acceptance in the United States.

Developing an approach that delivers adequate care on a sustainable basis in the United States will involve experimentation and likely require years of dialogue, debate and democratic action. There are many possible solutions, many different individual situations, and many differences by state. Matters important to the analysis will change over time. An attempt to develop a single solution for all situations and for all time periods is likely to leave gaps or provide excess coverage, which is inefficient. In such complex situational analysis the fuzzy-set methodology of this paper is likely to lead to better analyses. It is also less likely to lead to fixed positions. It is hoped that this paper has made a contribution to the dialogue and will provide signposts for further analysis and debate.

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