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Interim Report IR-02-003/January

Comparative Analysis of Long-Term Care Systems in Four Countries

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Social Security Reform

January 2002

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Abstract

This paper deals with long-term care (LTC) systems in four developed countries – Germany, Japan, Sweden and the U.S.A. – from an economic point of view. Since these countries have differing traditions in welfare policy, the role of the state in financing and providing LTC services differs considerably. This paper focuses on these differences and their practical consequences. Firstly, a theoretical survey is undertaken to see under what circumstances and to what degree state intervention can be justified in order to increase economic efficiency. Secondly, the LTC systems of the four countries are analysed qualitatively in the light of economic theory. Thirdly, the systems are compared quantitatively, with the main focus on their distributional impact. Furthermore, the issue of how state intervention alters the potential benefit from buying a private LTC insurance is analysed, as well as how the internal rate of return from a pay-as-you-go (PAYG) system changes over time in one of the countries (Sweden).

The main conclusions are as follows:

- The design of LTC systems in the countries studied mainly follows social welfare traditions as developed in other sectors; the only exception being Japan, where a much more extensive role of the state in financing LTC has evolved over the last ten years compared to the rather modest role of the state in the Japanese economy in general.
- The differences in design of LTC systems have substantial distributional implications. All systems are progressive and favourable to women, but there is a wide range between the countries.
- In Sweden, the internal rate of return from a PAYG system is constantly decreasing with each cohort, but still positive for all cohorts born before 1990. The steady decline of the returns indicates that it will turn negative for later cohorts.

Acknowledgments

I would like to thank Landis MacKellar, leader of the IIASA social security reform project for giving me the opportunity to benefit from the intellectually stimulating environment at IIASA and for granting me a high degree of freedom in my work. I am also very grateful to Leslie Mayhew, my supervisor, who guided me through my work and who was always available for discussions and comments. Furthermore, I would like to thank my colleagues in the YSSP program for fruitful co-operation as well as for contributing to make the summer in Vienna an unforgettable experience. Last but not least I am greatly indebted to the administrative staff at IIASA – the YSSP staff, the library staff and the secretary of the SSR project Ingrid Teply-Baubinder – for their helpfulness with all practical details. The study was supported by Formas, the Swedish Council for Environment, Agricultural Sciences and Spatial Planning.

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1. Introduction

Long-term care (LTC) and its financing has attracted increasing attention in most developed countries over the last ten years. One important reason for this is obviously the aging of populations that is anticipated to take place in the first decades of the 21st century. The prevalence of disability is the highest among people aged 80 and older. This group is expected to increase in number during the next few decades: in the United States, due to the aging of the 'baby boom' generation, it is expected to increase by nearly 270 percent the next forty years. For Germany, the corresponding figure is 160 per cent and for Japan it is more than 300 per cent. Thus, demand for long-term care might increase considerably. At the same time, the working population is expected to shrink in most countries, making the financing of LTC services problematical.

Contributing to these concerns about LTC financing are the facts that the share of elderly living alone is increasing, that there is a trend towards the disintegration of families and that the female labour force participation rate is increasing in most countries. These factors reduce the availability of care by family members, and thus increase the dependence on formal systems, whether private or public. Furthermore, as the demand for formal LTC services increases, this sector will have to attract more workers – and so wages and total costs might be expected to increase.

On the other hand, the effects of demographic changes are expected to be offset by a general improvement in the health status of the elderly. There are some indications that disability spells normally occur at the end of life, regardless of the time of death (Zweifel *et al* [1999]). If these observations are correct, the impact of aging will not be as large as suggested above. But even the number of people in their last stage of life will increase, and so even dynamic forecasts of LTC costs assume a significant increase (OECD [1998]).

If the importance of LTC services increases, the role of the government in LTC financing becomes crucial. Different countries have chosen solutions that differ with respect to incentives, the division of responsibility between the public and the private, and distributional consequences. This paper tries to deal with issues like this in more detail. The purpose is to compare LTC systems in different countries and analyse how the responsibility for LTC has been divided between public and private institutions. Since LTC is a complex matter, systems are analysed qualitatively as well as quantitatively. Particular attention is given to distributional aspects of LTC systems. A simple model is developed for this purpose. Furthermore, the prospects for private insurance in different institutional settings will be analysed.

The paper is organised as follows. In the next chapter, an overview of theoretical approaches to LTC is given. The purpose is to investigate the economic rationale for state intervention in LTC markets. In the following four chapters, the qualitative aspects of LTC systems of four different countries are analysed in some detail. The countries have been chosen so as to represent interesting ‘model cases’ of LTC financing. In chapter 0, the systems are compared with respect to some important features. Above all, the distributional impact of different systems is evaluated. In chapter 0 observations from preceding chapters are being analysed.

2. Theoretical Aspects of Long-Term Care

1.1 What is Long-Term Care?

Long-term care (LTC) is a complex matter and it may be defined in a variety of ways. One such definition is given by the American Institute of Medicine [1986] as “a variety of ongoing health and social services provided for individuals who need assistance on a continuing basis because of physical or mental disability”. The characteristics of long-term care might become clearer if compared with medical care, as is done by Norton [2000]. Norton points out that LTC a) is care for chronic illness or disability for which hospital care is no longer deemed appropriate and b) is often provided by unpaid caregivers, instead of professionals. In the sequel, these definitions will be used.

2.1 Policy Options

There are three important aspects of national LTC systems to be taken into consideration; firstly, how services are *provided*, secondly, how services are *financed*, and thirdly, how the *need* of the individual client is assessed. *Provision* of services may be the responsibility of the family, the public sector, or private companies, or a combination of all. *Financing* may be taken care of by private insurance, out-of-pocket payments, taxes or social insurance. *Assessment of need* may be carried out by either the provider or the financing institution or some kind of independent body. Thus, there are several different combinations for states how to design LTC systems, and this fact is reflected by the diversity in national LTC systems. In recent years, important reforms have been carried out in some countries, and even within countries the diversity seems to have increased (Cohen [1998]).

One dimension that one might wish to add is the issue of *decision-making power*. This aspect is added by Burchardt [1997] to the standard analysis of private and public responsibilities for welfare services. Certainly, a voucher gives a client more freedom of choice than a preferred-provider arrangement within an integrated system. However, Burchardt’s definition of decision-making power seems inadequate in the sense that decisions by agents representing the client – such as care managers – are treated as public decision-making. In some cases, it would probably make more sense to look upon the agent as a representative of the client.

One way to find guidelines for the design of a LTC system would be to turn to the concept of economic efficiency.¹ According to economic theory, private markets are efficient if some stringent conditions are met. If these conditions are not met, there is a case for state intervention.² This intervention may take on many forms, and has to be in proportion to the market failure that is present.

Since there are two potential markets for LTC – LTC services and LTC insurance – there are two possible sources of market failures to be taken into consideration. Most authors agree that LTC services themselves do not exhibit characteristics that would justify state intervention on efficiency grounds (cf. Pauly & Zweifel [1996]). One possible reservation in this respect is the case of clients with mental impairments, where the sovereignty of the consumer might be threatened in a way that would justify care management.

Concerning LTC insurance, the case is less clear. Thus, in the following section, the characteristics of the market for LTC insurance is analysed in more detail, to test the case for public intervention or regulation.

2.2 Market Failure in Insurance Markets

The need for long-term care represents a considerable loss that has a relatively small risk of occurring. Thus, a risk-averse individual would generally like to buy insurance against this risk. Consequently, the low demand for private LTC insurance has been taken as an indication of market failure. In the sequel, the issue will be analysed systematically to see to what extent market failures might be present.

2.2.1 Insurable Risk?

Certain conditions have to be met to make a risk insurable. In general, there should be a) a definite loss not under the control of the insured, b) a large number of homogenous exposures to the same risk, c) the risk should be significantly less than one and d) the loss must be unlikely to affect all insured simultaneously (cf. Barr [1992]).

In the case of LTC, the individual has some scope to control the magnitude of the expected loss. Firstly, lifestyle might to some extent influence the risk of dependence occurring (*ex ante moral hazard*). Secondly, the need itself is not observed by the insurer, but rather some measure of it, and once it has materialised the individual might try to influence the assessment process to get as much out of the insurance as possible (*ex post moral hazard*).

Furthermore, the risk one wishes to insure against is actually costs of care. The cost factor – the rate of inflation in care services – represents an intertemporal risk that affects everybody in a pool. This interdependence of risk makes diversification harder. Besides, the serial correlation of costs may make diversification across cohorts impossible (Cutler [1993]). One way to solve this problem would be to offer social

¹ 'Economic efficiency' is in this paper defined according to the concept of Pareto Optimality. For a thorough examination of this concept, see Cullis & Jones [1992].

² It should be noted that the public choice school claims that state intervention is not always superior, even when market failures are present.

insurance, since the government might be superior in dealing with intertemporal risks. To private insurers, the only solution is to offer indemnity insurance or to charge sizeable risk premiums.

2.2.2 Free Riding

Another reason for the non-existence of comprehensive private LTC insurance market might be free-riding. There is some evidence from American data that the existence of generous Medicaid arrangements tends to decrease demand for long-term care insurance (Sloan & Norton [1997]). It should be pointed out, though, that free riding behaviour does not have to depend on the existing welfare system. Considering the time span involved, it might also be rational not to insure in anticipation of future reforms.

Free riding might potentially challenge the proper functioning of the market. If the number of free riders is large, the market gets thinner, which is a problem in itself because insurance markets are based on the law of large numbers. Thus, free riding may make insurance more costly.

2.2.3 Adverse Selection

There are three conditions for adverse selection to be a problem in an insurance market: a) the population to be insured is heterogeneous, b) potential customers know to what risk group they belong, and c) the insurer is unable to discriminate between risk groups. Thus, information asymmetries, or legislation constraining the freedom of the insurer to diversify policies, is required for the problem of adverse selection to arise.

It is quite obvious that the population is heterogeneous with respect to LTC risk. Swedish data show that there are considerable differences in expected costs for LTC between groups defined by social and marital status (SOU [1998]). Among people between 65 and 74, the expected cost differs by a factor of 12 between the highest (single male unqualified workers) and the lowest group (married female white-collar workers). One possible objection would be that differences in life expectancy among those groups diminishes this difference. However, recent research suggests that remaining life expectancy is a better indicator of care need than age (Zweifel *et al* [1999]). Furthermore, the ‘cost of dying’ in terms of long-term care has been shown to increase with age (McGrail *et al* [2000]).

Another study of interest is presented by Murtaugh *et al* (1995), where the precision of underwriting criteria to identify high-cost groups was tested. Samples of the whole population aged 65 and 75 were employed to estimate the probability of being rejected if applying for private LTC insurance. The authors find that the criteria used – including *inter alia* ADL³ limitations, previous illnesses and lifestyle – are successful in identifying high risks. For instance, a person who has already an ADL limitation exhibits a ratio between expected insurance benefits and premiums around three times higher as the group not rejected. However, this result is sensitive to the actual design of the insurance contract. If inflation protection and non-forfeiture benefits⁴ are added, most rejected groups exhibit risk profiles comparable to those of

³ ADL, Activities of Daily Living, is a measure used to estimate the degree of disability.

⁴ Non-forfeiture benefits reimburses a part of unused premiums to the insured.

the non-rejected. This is due to the fact that those groups have a higher life expectancy and thus benefit less from inflation protection. The only exception are clients with cognitive impairments, who still represent an exceptionally bad risk.

Consequently, there are several instruments available to insurers who want to discriminate between risk groups. But are there information asymmetries? One attempt to answer this question is made by Norton & Sloan (1997), who include personal expectations in an econometric model explaining the decision to purchase private LTC insurance. The authors interpret the high significance of one of these subjective variables – the probability of being in a nursing home in five years – as evidence of the hypothesis that adverse selection is present. Some caution is recommended regarding this conclusion, however. A personal belief of this kind is not necessarily related to actual risk; it might just as well reflect a greater anxiety, or that the client in question is better (worse) informed on general risks of ending up in a nursing home.

To sum up, there is not sufficient evidence that adverse selection is an important explanation behind the limited coverage of private LTC insurance. It rather seems that screening of potential customers would enable insurers to discriminate quite precisely between risk groups, at least if people sign up for insurance at a relatively young age. Thus, government intervention could be limited to stipulating a maximum age for purchasing LTC insurance.

2.2.4 Principal-Agent Models

It has been argued by Pauly [1990] that parents' demand for LTC suffers from a special moral hazard effect because children might decide to reduce their care-giving in favour of formal care. This issue has been explored in more detail by Zweifel & Strüwe [1996, 1998], who model the behaviour of parents and children as a 'principal-agent' problem.

Zweifel & Strüwe [1998] show that buying LTC insurance might not be in the parent's interest, because the child might reduce its care-giving. This effect is more likely to appear if the child has a comparably low wage. Zweifel & Strüwe draw the conclusion that a mandatory LTC insurance might represent a loss to a large fraction of the population, since it makes the principal-agent relationship less efficient.

One serious criticism that might be aimed at the principal-agent argument is that the decision of the child might be biased by income taxation, so that the child provides more informal care than what is economically efficient. Thus, the principal-agent argument certainly serves as an *explanation* why coverage of LTC insurance is so low, but it is more doubtful as a *justification* on economic efficiency grounds for this outcome. Furthermore, the demographic changes that are occurring in most developed countries increase the number of elderly who do not have access to informal care, and so diminish the relevance of the principal-agent argument.

2.3 Optimal LTC Insurance

Previous sections suggest that there might be a case for mandatory LTC insurance. Furthermore, the existence of such programs in some countries calls for analysis of how it might be optimally designed. Although government involvement in

LTC is increasing in many countries, not much has been written on this topic (Norton [2000]).

One recent article by Miyazawa *et al* [2000] analyses the issue whether and under what conditions social LTC insurance might enhance economic efficiency. Using a very simplified model, they first conclude that a mandatory LTC insurance can only be justified on efficiency grounds provided that the population growth rate exceeds the interest rate,⁵ which seems very implausible for most developed countries. Still, by introducing a health investment externality, the authors find a scope for social LTC insurance to enhance efficiency; by altering the relative price of health investments, it brings the economy closer to the optimum rate.

The value of these findings can be questioned, though. Firstly, Miyazawa *et al* use perfectly functioning insurance markets as their benchmark; an assumption that sure enough makes it hard for a mandatory insurance to increase efficiency. If there is excessive loading of premiums, due to imperfections in the LTC insurance market, social insurance might be superior. Furthermore, it is dubious whether the health investment externality really is relevant. Firstly, insurance companies should be able to detect health investments at least to some degree. Secondly, since the role of social LTC insurance in this model is just to shift relative prices, it might just as well be done by general income taxes.

An intuitive analysis is offered by Pauly [1996]. Using efficiency and equity criteria as guidelines, Pauly arrives at the conclusion that the American system for LTC financing is nearly optimal. The reason is that protection of assets of disabled elderly is not an important social objective for the massive majority of nursing home residents that do not recover to a normal life. Thus, Pauly confines himself to suggest some minor changes of the present American system, such as introducing the option to “voucher out” of the Medicaid system as well as improving protection of assets for those who recover.

Pauly’s analysis offers many important insights, but some objections may be made to it. Firstly, it is very focused on American conditions and might thus not be valid for other countries. In Germany, for instance, the legal responsibility of adult children to support their parents might very well give a justification for a more general coverage of public LTC insurance. Secondly, economic efficiency might be increased if a uniform system is introduced, since administrative costs probably increase with the number of players in the LTC market. One might also ask whether equity considerations do not require that the ratio between contributions and benefits is more advantageous for those with higher income.

Another peculiarity of Pauly’s article is that he suggests that the price of LTC for Medicaid patients be practically zero. The rationale behind this conclusion is that LTC access can be regulated by careful assessment of clients’ needs. This two-tiered price system does not seem to agree with principles of economic efficiency (especially since the price elasticity of Medicaid clients has been estimated to be higher than that of private payers). Since there is a moral hazard risk present, all clients should face some marginal cost for utilising LTC services.

⁵ This is a well-known result from the analysis of pension insurance. The reason is that the rate of return in a PAYG (pay as you go) system equals the population growth rate, whereas the rate of return in a fully funded system equals the interest rate.

The optimal time for purchasing LTC insurance has been analysed by Meier [1999]. In a two-period model, the individual may choose to buy LTC insurance at the beginning of each period. Meier finds that the early and the late purchase of insurance are equivalent in most settings (due to the efficiency of capital markets). Factors that may alter this conclusion in favour of late purchase are 1) fixed loading costs in insurance premiums, 2) uncertainty about the costs of disability and 3) adverse selection regarding risk of pre-retirement disability. On the other hand, if there is uncertainty regarding the probability of becoming disabled during old age, buying insurance early is preferred since income risk between two periods may be eliminated. Meier concludes that late purchase of LTC insurance seems rational; a result that should be taken into consideration by policymakers trying to enact mandatory LTC insurance.

2.4 Discussion

Economic theory remains inconclusive regarding the most efficient system for LTC provision. Regarding the services themselves, it is quite clear that they are ordinary marketable goods that do not require state intervention to achieve an adequate level of production. One could argue that the fact that some amount of LTC services is guaranteed to all who need them in all developed countries is a strong indication that most people consider access to LTC a right. This is the classic ‘merit good’ argument: that some goods cause positive externalities in consumption by the poor, and thus should be subsidised by the state. However, this does not justify public provision of the services; it would probably be enough to design a voucher scheme for the poor (Pauly & Zweifel [1996]).

Concerning the market for LTC insurance, the case remains less clear. There are a number of potential market failures that might justify state intervention. If the *intertemporal risk* aspect is important, which seems to be the case, state intervention might be justified. In this case, the state could offer coverage for care costs above a certain deductible. This would reduce the uncertainty left in the insurance market, and private companies could offer indemnity insurance of the kind that is already available. On the other hand, this solution has the disadvantage of splitting the responsibility for LTC on two different payers, a solution that might increase administrative costs.

The presence of *moral hazard* would probably not justify state intervention. Also a private insurer may adapt his policies to reduce the amount of moral hazard. When *ex ante* moral hazard is a problem, it is normally suggested that it might be tackled by experience rating. It is doubtful whether this option would be efficient in the case of LTC insurance, since the insured very often receives benefits close to the end of life. Another option, that might lessen the amount of both kinds of moral hazard, is coinsurance. Most insurance policies have a waiting period of between one month and one year. Furthermore, it is common that insurance companies only offer indemnity insurance, facing the insurer with 100 per cent of the risk above a certain threshold. Probably, a fixed rate of coinsurance, e.g. 10 per cent, would be more efficient in steering the consumer’s behaviour though.

The problem of *free-riding* might be solved by making insurance mandatory. However, the case for regulation is weaker here than for e.g. auto insurance, since the damage of not having insurance only hurts the non-insured himself. A mandatory

scheme that is introduced just to reduce free-riding on means-tested benefits is not motivated in terms of economic efficiency.

The problem of *adverse selection* might be solved by regulating the market. If consumers gain an increasing knowledge of their personal risk with age, the government might state a maximum age for purchasing LTC insurance. However, since most purchasers of LTC insurance seem to prefer buying it at a quite high age, this solution might be suboptimal. Another way of getting around the problem would be to make insurance mandatory. However, the regulation of the insurance market requires some caution. If the freedom on the part of the insurer to set actuarial premiums is limited, there is an incentive for insurance companies to attract good risks and keep bad risks away. This problem of *cream skimming* will not arise if actuarial premiums are allowed, or if there is a risk adjustment system.

To sum up, there are some economic efficiency arguments in favour of state intervention in the market for LTC insurance. However, there is no rationale for the government to offer more than partial coverage.

If a social insurance is introduced, the government has to choose between a PAYG and a fully funded system, or a combination of the two. Arguments in favour of a fully funded system are the higher rate of return (Miyazawa *et al* [2000]) and its relatively small vulnerability to demographic changes. Furthermore, a fully funded system is more practical in a context where people's mobility is increasing. Finally, intergenerational justice argues in favour of a fully funded system.

However, a fully funded system has the disadvantage that it is costly to introduce, since ordinary LTC has to be paid for at the same time as reserves are being built up. Furthermore, the existence of those reserves could represent a temptation to politicians to expand LTC services more than would otherwise have been the case, thus giving rise to excess consumption of LTC.

In practice, only PAYG systems, with relatively small reserves, have been launched. But even within this context, the issue of intergenerational justice can be taken into consideration. Meier [1999] argues that the optimal age to purchase LTC is at retirement, and this result should guide the design of a social insurance scheme. However, a social LTC insurance can be seen as partly protecting bequests, and thus also parts of the working population should contribute to its financing. This argument cannot be taken too far, though. As life expectancy increases, so does the age of the potential heirs, and burdening of younger cohorts in the working population becomes less motivated.

This theoretical discussion serves as a background for the empirical investigation of LTC systems. In the following chapters, the actual design of the LTC system in some countries is analysed in more detail.

3. Germany

3.1 Background

Following a parliamentary decision in 1994, a mandatory long-term care (LTC) insurance (*Pflegeversicherung*) was introduced throughout Germany at the beginning of 1995. Up to that date, long-term care had not been a public concern like pensions and health care. In 1973, it was indeed made possible to get expenditure covered by the health insurance in particularly severe cases, but except for that there was no public compensation for long-term care costs.

It is important to notice, though, that the need for public involvement in long term care financing was limited. According to German law, children are obliged to support their parents at old age, to the degree that their own resources are insufficient. Only if family income and wealth has proven insufficient the elderly may apply for social assistance.

In the seventies, a marked increase in the means-tested public expenditure on long-term care could be noted. This trend continued throughout the eighties, and 1991 as much as 40 per cent of social assistance expenditures were related to long-term care. This development might partly be due to insufficient coverage of the public pension system: since the German pension insurance offers no basic pension for those with a deficient working history. There is a considerable portion of elderly who have to rely on social assistance.

The dramatic increase in the costs for long-term care attracted public attention to the problem. Since Germany will experience a considerable ageing of the population in the next few decades, there were no prospects that this cost explosion might be halted.

The introduction of a mandatory insurance followed an intense political debate, where a wide spectre of reform suggestions was taken into consideration. It is not a coincidence that the form finally chosen borrows some of its typical features from the health insurance. The welfare political agenda in Germany is very path-dependent and broad political agreements can normally be reached only within the outline of the existing social insurance system.

In the final legislative proposal, three main objectives of the new insurance were stated:

1. To support and encourage care provided at home by relatives or neighbours, so that the client is able to stay in his ordinary home as long as possible. Institutional care is only to be provided when care at home is regarded as impracticable.
2. The risk of developing a dependence on social assistance that is solely due to need for long term care, shall be eliminated. This goes in particular for patients of nursing homes, where reliance on social assistance had increased considerably.
3. To develop an effective and nationally standardised care infrastructure that is able to provide professional services of domiciliary as well as institutional

care. As a result, the practice of using hospital beds for these patients should decrease (Schneekloth & Müller [2000], p. 13)

3.2 Financing

The German insurance is a PAYG⁶ system where risks are pooled and benefits are independent of earlier contributions. One peculiarity of the LTC insurance is that it has defined contributions and defined benefits at the same time. This means that total benefits and total contributions must match on average, and so far this requirement seems to have been met. Regarding the outline of the insurance in other respects, it might be summarised in the following way (Evers [1998]):

- All employees as well as individuals with some other kind of income have to be insured. In addition, voluntary insurance is offered to some groups.
- Employers and employees pay the same percentage of the wage. The fee was originally set to 1 per cent of gross income, but is now fixed at 1,7 per cent. Retired people also contribute to the insurance. Civil servants (*Beamte*) get half of the insurance paid by their employer, and may complement it with private arrangements.
- High-income earners – employees with an income above 6 500 DEM (\$ 3,000) per month – may choose to take private insurance instead.⁷
- The LTC insurance also covers family members, who are included without having to pay extra contributions.
- For people dependent on social assistance, the local authority concerned may choose between paying contributions and taking the risk of having to pay for care.
- The insurance is administered by *care funds* that are formally independent from, but closely tied to, the already established sick funds (Schneider [1999]). There are about 400 sick funds (*Krankenkassen*).

Being a PAYG system, the LTC insurance did not build up more than a small buffer fund. According to the law, this fund must exceed the payments of 1.5 months, and at the moment it contains about twice that amount.

3.3 Benefits

It takes five years to qualify for benefits. Except for that, the only requisite to qualify is need for care, so benefits are paid independent of age. Three kinds of benefits are offered: professional domiciliary care, institutional care as well as benefits in cash. Different kinds of benefits may also be combined. Benefits are not dependent on the income of the patient.

⁶ Pay as You Go.

⁷ To be correct, this option actually concerns the public health insurance. All of those who have a public health insurance – be it voluntary or not – are obliged to sign up for the LTC insurance.

Two principles guide the choice of benefits. Firstly, preventive and rehabilitating measures are preferred to plain care. Secondly, domiciliary care is to be given priority above institutional care. This is in accordance with the objective to enable the elderly to stay as long as possible at home.

The aim with benefits in cash is to support private, family-based arrangements. This kind of support is much lower than the payments to professional caregivers.

To control spending, there is also a rule stating that the insurers may not spend more than 30,000 DEM (\$ 13,700) per year on one single client.

Originally, the aim was to make benefits match the condition of the individual as well as possible. However, negotiating benefit schemes proved to be a difficult task, and a provisional solution was implemented, that distinguishes only three levels of need. The intention was to replace this system at the end of 1997, but it is still in use (Evers [1998]).

People applying for benefits are examined by a doctor and then divided into three groups. The critical factors are the person's ability to perform activities of daily living (ADL), as well as the time that these activities are estimated to consume. Mental impairments are not taken into account.⁸ The minimum need for eligibility to benefits is 1.5 hours per day. The three classes are defined as follows:

- I. Clients, who need help with at least two activities at least 90 minutes a day and who need help with cooking or shopping at least two times a week.
- II. Clients, who need help at least three times a day, and also need help with cooking and shopping at least two times a week.
- III. Clients, who have a need for care at least five hours a day, where at least four of them are due to basic personal care, and who need help with cooking and shopping.

Benefits for different classes are described in *Table 1*.

Table 1. Monthly Benefits from the LTC Insurance. German Marks

	Cash Benefit	Domiciliary Care	Institutional Care
<i>Category I</i>	400	750	2 000 750*
<i>Category II</i>	800	1 800	2 500 1 800*
<i>Category III</i>	1 300	2 800 3 750**	2 800 3 000**

Source: Bundesministerium für Gesundheit.

⁸ The German government has recently passed a law that will ease the situation of clients with 'extensive need' – i.e. normally persons with mental impairments. The law, which comes into force in 2002, allocates some 500 million DEM to special benefits for this group.

* Part-time care.

** Severe cases.

In some cases, the insurers will pay less than the amounts listed in *Table 1*. Firstly, an insurer may not pay more than 2,500 DEM (\$ 1,150) per client on average (outliers not included). Secondly, expenses for severe cases may not exceed 3 per cent of total expenditure in category III. Thirdly, the law states that the client shall contribute with at least 25 per cent of the fee for institutional care herself, which may lead to less than the standard amount being paid, especially in cheap nursing homes (Bundesministerium für Arbeit und Sozialordnung/BMAS [2000], p. 50).

3.4 Coverage

At the end of 1999, 71.37 million people were covered by the public LTC insurance. At the same time, 8.13 million had signed up for private insurance. Thus, about 90 per cent of the population is part of the mandatory scheme. The responsible ministry estimates the number of non-insured to about 300 000 – 500 000 people. This group mainly consists of small business owners, that chose not to get insured, as well as some social assistance recipients (Bundesministerium für Gesundheit [2000]).

About 1.92 million receive benefits from the insurance. 1.35 million of these get domiciliary care, whereas 0.57 million stay in nursing homes. Among those who are cared for at home, 52.2 per cent are subsumed to category I, 36.9 per cent to category II and 10.9 per cent to category III. For those getting institutional care, the corresponding shares are 37.4 per cent for category I, 41.5 per cent for category II and 21.1 per cent for category III.

Table 2 shows the age and sex distribution of LTC insurance beneficiaries. It might be noted that the LTC insurance is not solely concentrated on elderly people, since almost 20 per cent of its beneficiaries are below retirement age. Nevertheless, the risk of being in need of long term care is highly age-dependent; rising from 0.5 per cent among people in working age to some 32 per cent for people who have reached the age of 80 (Bundesministerium für Gesundheit [2000]).

Table 2. Age and sex distribution of benefit recipients

Year	Age groups										Total	Men	Women
	- 20	20 – 55	55 – 60	60 – 65	65 – 70	70 – 75	75 – 80	80 – 85	85 – 90	90+			
1995	6.9	10.9	3.3	4.4	6.4	9.4	9.8	18.8	19.0	11.0	100.0	35.6	64.4
1996	5.2	9.1	3.1	4.1	5.9	8.8	11.3	18.4	21.1	13.0	100.0	31.2	68.8
1997	5.2	10.1	3.1	4.3	5.8	8.5	12.5	16.1	21.0	13.4	100.0	31.6	68.4
1998	5.1	10.4	3.0	4.5	5.6	8.6	13.7	14.0	21.1	14.0	100.0	31.7	68.3
1999	5.1	10.4	2.8	4.5	5.7	8.6	14.0	13.1	21.0	14.6	100.0	31.8	68.2

Source: Bundesministerium für Gesundheit.

Table 3 illustrates the distribution of clients over different kinds of benefits. It should be noted that more than fifty per cent of clients get benefits in cash, but also that institutional care has been gaining importance ever since it was introduced in 1996. Even within category III, a remarkably high share of clients chooses the cash

benefit. The reason for this pattern has been debated ever since the insurance was introduced. Evers [1998] points out some factors; e.g. that this kind of benefit is the most suitable to German family structures. Furthermore, it has been suggested that these benefits are not as close substitutes as was originally presumed.

Table 3. Shares of different kinds of benefits

Year	Type of Benefit								Total
	Cash	Domiciliary	Combination	Respite	Part-Time	Short-Time	Institutional	Institutional; disabled	
1995	83.0	7.7	7.7	1.0	0.2	0.3	-	-	100.0
1996	60.4	6.8	8.7	0.4	0.2	0.4	22.7	0.4	100.0
1997	56.3	6.9	9.1	0.2	0.3	0.3	24.6	2.2	100.0
1998	53.6	7.5	9.6	0.2	0.4	0.3	25.2	3.2	100.0
1999	52.0	8.1	10.2	0.3	0.5	0.4	25.7	2.9	100.0

Source: Bundesministerium für Gesundheit.

The LTC insurance has a yearly turnover of about 32 billion DEM (\$ 14.9 bn.), which works out at less than one per cent of GDP. The development of costs for the social LTC insurance and the LTC-related social assistance costs is pictured in *Figure 1*. Most of the years since the LTC insurance was introduced, it had a small surplus that could be transferred to the reserve. Since 1999, though, there has been a small deficit, and the financial position is not expected to improve before the middle of this decade.

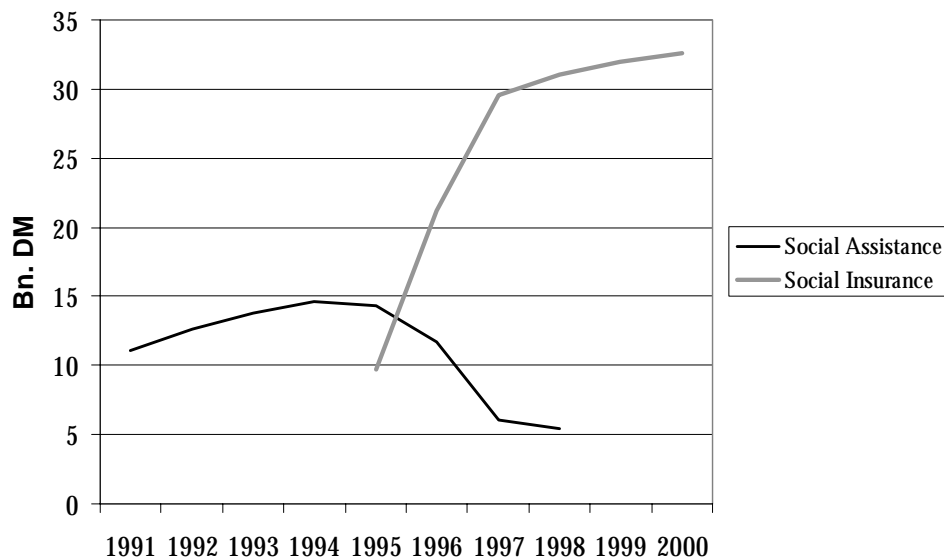


Figure 1. German LTC Costs.

Sources: BMAS & Bundesministerium für Gesundheit.

Since the introduction of the insurance, the costs for care-related social assistance have decreased considerably. In 1994, social assistance costs to this end

amounted to almost 13 billion DEM, whereas in 1997 the corresponding figure was 5 billion DEM. Since other social assistance costs were more or less constant during the same time, care-related costs actually shrunk from one third to one eighth of the social assistance budget in only three years.

Besides reducing social assistance expenditures, the LTC insurance has relieved the pressure on the health insurance significantly. Firstly, special funds designed for particularly needy – amounting to 3.5 billion DEM – were transferred to the LTC insurance. Secondly, due to the expansion of institutional care, the number of hospital beds could be reduced, and so another 2.7 billion DEM were saved. These figures are not included in *Figure 1*.

Despite these positive changes, the LTC insurance did not lessen the social assistance dependency among elderly to the degree that was originally intended. This goes in particular for clients of institutional care, where the number of social assistance recipients has not even halved since the introduction of the LTC insurance. In 1997, 185 000 clients in institutional care – about 40 per cent of that group – received social assistance. The reason for this high share is that clients in nursing homes are charged extensive fees for food and accommodation. On the other hand, the need for social assistance among those who stay at home is significantly lower.

3.5 The supply side

The LTC insurance has been constructed along the lines of the mandatory health insurance, where competing sick funds provide insurance. Each fund is required to have a separate organisation for the LTC insurance. Those who already have a health insurance automatically get their LTC insurance at the same fund.

In addition to the public sick funds, there are private insurance companies that offer the same kind of insurance for those who are not part of the mandatory scheme. These companies are obliged to offer insurance that is equivalent to the public one (BMAS [2000]). One important difference, though, is that the premiums of private LTC insurance are not related to income, but to the age of the insured when signing up for insurance.

The public sick funds sign contracts with care providers. These have to be either non-profit nursing homes or private companies. The law forbids discrimination of the latter. In cases where the client is entitled to domiciliary or institutional care, the benefit from the insurance turns into a ‘voucher’ that is transferred directly to the caregiver.

If the client chooses a benefit in *cash*, she gets it herself, but is expected to be able to prove that it is used for care. The sick funds are obliged to examine the situation of the client at a regular basis. Care provided by family members is acknowledged in the public pension and work injury insurance, as well as in some labour market programmes that are based on working experience.

There are over 11 000 units – private companies and non-profit organisations – that offer *domiciliary* care. Only a small share (4 per cent) is provided by public caregivers. Most of the institutions that are supplying domiciliary care were already on the market when the LTC insurance was introduced. Among start-ups, private companies are dominating. Most caregivers are small; 17 per cent have less than five employees (Schneekloth & Müller [2000]).

The introduction of the LTC insurance incurred a quite drastic structural change within the *institutional* care system. Most of the institutions that were present before the introduction of the insurance have adapted to the new system and signed contracts with the sick funds. Only 6 per cent of the about 8 000 caregivers have entered the market after 1996. The capacity seems to be large enough for the current needs.

3.6 Discussion

The German LTC insurance has strong support; clients in institutional as well as domiciliary care expressed a high level of satisfaction in a recent survey. It also seems to have achieved its objectives to at least some extent. The fact that more than 70 per cent of those eligible opt for home care is a strong indication that the new insurance promotes this kind of care. On the other hand, the insurance has not been able to reduce dependence on social assistance as much as intended. Since the remaining social assistance costs mainly are due to outlays on lodging and food – that the LTC insurance is not meant to cover – this problem might just as well be attributed to the pension system, that lacks a basic pension component.

The third objective – to increase the number of professional providers – also seems to have been accomplished to some degree. However, states (*Länder*) have been reluctant to provide the necessary infrastructure. Furthermore, there are still shortages of labour in the LTC market – despite the increase by some 75,000 employees between 1993 and 1996 the lack has been estimated to around 150,000 persons (Schneider [1999]).

The German LTC insurance has been criticised for strengthening the division between acute and long-term care, a division that is claimed to be becoming outdated from medical and geriatric points of view (Schneider [1999]). However, the close relationship between sick funds and care funds could lessen the incentives to cost shifting induced by this division. On the other hand, the fact that a customer has to be member of the care fund corresponding to his sick fund surely reduces the competition among care funds. This problem is augmented by the fact that care funds are not allowed to compete by price, which is allowed in the social health insurance (Greiner & v.d. Schulenburg [1996]).

It is doubtful whether the German LTC insurance represents an optimal solution. It has been claimed that the new insurance borrows too many features from existing social insurances and entails too little innovation (Greiner & v.d. Schulenburg [1996]). One aspect that might be criticised is the fact that the government does not exhaust its relative advantage in offering catastrophic risk coverage, but restricts its involvement to offering indemnity insurance. Since insurance policies like this would have been available in the private market in any case, it might have been more appropriate if the social insurance system would have covered costs above a certain threshold instead.

On the other hand, the German solution will limit *moral hazard* problems. The caps put on benefits imply that the marginal cost faced by clients not on social assistance equals the actual price. This would serve to limit ex ante as well as ex post moral hazard. The formalised procedure for assessing need also restricts the possibilities of the client to demand more care than actually needed.

To sum up, the German LTC scheme offers a substantial relief to disabled as well as informal carers, without changing the basic property of the German welfare state that LTC is essentially a private responsibility. With the new LTC insurance, the German system will be more sustainable in the demographic setting that is expected for the next decades.

4. Japan

4.1 Background

Since Japan got industrialised quite late, it also developed social security systems after most other developed countries. A poverty law was introduced in 1874. Another important milestone in the history of the Japanese welfare state was the introduction of a national health insurance in 1922. Moreover, a pension system for workers was introduced in 1941.

It was not until after World War II, though, that the development toward a modern welfare state began. The 1947 Constitution stipulates that all Japanese citizens have a right to enjoy a minimum standard of living. A government council on social security was established in 1950, and in the next years, a coherent – although mainly supplementary – public welfare system began to develop. A Child Welfare Law was adopted in 1947 and a Welfare Law for Handicapped in 1949. These laws were followed by a social assistance law (1950) and a social service law (1951).

In the 1960s, the aim in welfare policy was to go “from selective to universal” measures and “from relief to prevention”. Health and pension insurances were reformed in 1961. After that, the national health insurance system covers all Japanese (Maruo [1997]). Nevertheless, social security expenditure remained very low by international standards, amounting to only 7 per cent in 1970, and the family remained the most important provider of social security.

In the 1970s, Japan began a slow process of catching up with other developed countries in term of social security spending. Public expenditures increased, including social services such as medical care and personal social services. The share of social security expenditure in GDP amounted to 11.4 per cent in 1985 and increased to 14.1 per cent in 1996 (the corresponding OECD averages were 20.6 and 23.9 per cent; ILO [2000]). This process was partly driven by an ageing of the population that was noticeable already in the seventies and partly by the well-known phenomenon that the public sector tends to grow in developed countries.

For elderly, an important step was taken in 1973, when medical care was made free for all aged 70 and older; social services remained means-tested, though. As a consequence, the number of hospitalised elderly increased rapidly in the next twenty years, and most of these stayed in hospitals paid by medical insurance (Campbell & Ikegami [2000]).

At the end of the eighties, there was increased political concern regarding long-term care for elderly. Japan at this time already had one of the oldest populations in the world, and there were no signs of a halt of this process. At the same time, the informal care sector, that was one of the pillars of Japanese social security, went into a crisis. Family patterns changed in a way that made traditional arrangements impossible.

To remedy these problems, the Japanese government presented a Gold Plan in 1989 that laid down a ten-year strategy for long-term care. The government was aiming at an ambitious expansion of services: targets were set for nursing homes as well as home and day-care services. After this, Japan experienced a rapid growth in the formal care sector; costs increased by 10-15 per cent per year, and the ambitious targets set up in the Gold Plan were actually raised in 1994 (Campbell & Ikegami [2000]).

With a growing care sector, it became obvious that the financing system needed reform too. In 1997, following a long discussion, a mandatory long-term care insurance was passed in the Japanese parliament. The insurance represents a radical break with Japanese welfare traditions, since it entitles all insured to benefits and thus shifts the responsibility for long-term care from families to the state. The insurance was introduced in April 2000 and will expand gradually during the next ten years (Campbell & Ikegami [2000]).

4.2 Financing

The LTC insurance is financed by 50 per cent from taxes and by 50 per cent from insurance premiums. The tax revenues are collected by 50 per cent from national taxes, and local and regional taxes contribute with $\frac{1}{4}$ each. Premiums are collected from people aged 40 years and over. Family members are automatically covered (Edebalk & Svensson [2000]). For those in the working population, the premium amounts to 0.6 per cent of income up to a ceiling. Premiums are shared between the worker and his employer (Campbell & Ikegami [2001]).

For elderly, premiums are deducted from pensions. These premiums are also income-related. There are five different premium levels, ranging from 0.5 to 1.5 of the 'standard premium'. The standard premium amounts to \$ 26 per month on average (Tokyo Metropolitan Government [2000]).

The LTC insurance is administered by the municipalities: there are 3,200 entities. The local LTC budget, that is decided by the local authority, is based on forecasts of supply and demand. Premiums paid by the working population are collected at the national level and are then allocated according to a formula based on demographic and income characteristics.

In addition to the public financing, a co-payment is imposed on the part of the clients, amounting to 10 per cent of care costs. This co-payment may be reduced for clients who were already enjoying care free of charge at the time the insurance was introduced.

4.3 Benefits

Eligibility for benefits from the LTC insurance is solely based on need. Thus, the financial position and family structure of the insured are not taken into account. The LTC insurance covers institutional as well as home-based care, and clients in all categories except the least needy may choose between them. There are three kinds of institutions: former social service nursing homes, formerly health-insurance financed homes for elderly and medical nursing care facilities. Home care services included are nursing care, rehabilitation, medical advice and various community services.

Furthermore, short-term stays in institutions as well as grants for home rebuilding are offered (Tokyo Metropolitan Government [2000]).

There is no benefit in cash. There were several reasons why a cash benefit was not included. Firstly, there was a wish among women to break old family patterns. Secondly, the government wanted to achieve a gradual expansion of LTC services, and there was a belief that more people would apply for cash benefits than for in-kind benefits. Thirdly, one aim of the reform was to expand the infrastructure of LTC, and the existence of a cash benefit might hamper such a process (Campbell & Ikegami [2001]).

The LTC insurance is mainly designed for elderly people; persons aged 40-65 are entitled to benefits only if they suffer from age-related diseases (e. g. Alzheimer's).

The method to assess need is quite sophisticated. The physical as well as mental status is examined in a survey consisting of 85 items, each with 3-4 levels. This survey is processed by a computer program that assigns a level of need to the client on a six-grade scale. The result of the assessment is further supervised by an expert group, consisting of personnel with medical as well as social expertise. The level of need is to be re-evaluated every six months (Edebalk & Svensson [2000]). If the client is not satisfied with the assessment, appeal to a regional body may be made (Tokyo Metropolitan Government [2000]).

Benefits cover actual costs (less the 10 per cent co-payment) up to a certain limit. Limits for home care are calculated according to a point system, where a number of points is assigned to each type of service. The points are multiplied by a certain yen amount, to get the actual benefit limit for different levels of need. One estimate of maximum benefits is given in *Table 4*.

Table 4. Limits of Monthly Home Care Benefits

Level of Need	Benefit Limit		# of Short-Stay Days (per six months)
	¥	\$	
<i>Requires Assistance</i>	61,500	504	7
<i>Requires Nursing Care 1</i>	165,800	1,358	14
<i>Requires Nursing Care 2</i>	194,800	1,596	14
<i>Requires Nursing Care 3</i>	267,500	2,192	21
<i>Requires Nursing Care 4</i>	306,000	2,507	21
<i>Requires Nursing Care 5</i>	358,300	2,936	42

Source: Tokyo Metropolitan Government.

In institutions, costs vary between ¥ 242,000 (\$ 2,000) and 414,000 (\$ 3,400) per month depending on the type of facility and the amount of nursing care needed. Meals, amounting to approximately ¥ 22,000 (\$ 180) per month, are not reimbursed by the LTC insurance (Tokyo Metropolitan Government [2000]).

4.4 Coverage

The new insurance scheme involves about 43 million of the working population, and 22 million retired. The rest of the population, some 61 million people, are only affected by the taxes charged to finance part of the program.

In 1995, 6.0 per cent of the elderly population were cared for in institutions,⁹ and 5 per cent were receiving formal help at home (OECD [1999]). Throughout the nineties, the number of clients in nursing homes was increasing rapidly. According to *Table 5*, the number of clients in institutions increased by 43 per cent between 1993 and 1999.

Table 5. Number of Clients in different kinds of Institutions, 1993-1999

Year	<i>Nursing Homes for the Aged</i>	<i>Special Nursing Homes for the Aged</i>	<i>Low-Cost Homes for the Aged</i>	<i>Total</i>	<i>% of 65+</i>
1993	64,854	192,719	19,036	276,822	1.65%
1994	64,569	205,729	21,363	291,924	1.66%
1995	64,263	218,769	24,465	307,912	1.69%
1996	64,446	234,946	30,326	330,279	1.74%
1997	64,584	250,482	35,728	351,518	1.78%
1998	64,553	264,937	41,568	372,025	1.82%
1999	64,450	281,060	49,202	396,338	1.88%

Source: Ministry of Health and Welfare

Estimates for 2000 show that 12.4 per cent of the elderly population – 2.7 million persons – would be eligible for benefits if they applied. However, the government has been quite optimistic in its forecasts of how many people will actually apply for benefits: 705,000 persons who live in institutions and 650,000 living at home were assumed to apply the first year. Thus, 1.35 million beneficiaries were expected, making up only 6.2 per cent of the elderly. In the long run, though, it is assumed that at least 80 per cent of beneficiaries will sign up (Campbell & Ikegami [2000]).

The insurance has now been running for more than a year, and it seems like the government's estimates of utilisation have been fairly accurate so far. An account is made in *Table 6*.

⁹ This figure includes a considerable number of elderly occupying hospital beds.

Table 6. Estimates and actual Certified and Receiving LTC Benefits (thousands)

	Estimated	Actual	
	<i>August, 1999</i>	<i>April, 2000</i>	<i>October, 2000</i>
Certified to be eligible	2,689	2,162	2,473
Receiving LTCI benefits	2,689	1,489	1,921
Community Care	1,984	971	1,297
Institutional Care (total)	705	518	624
<i>Nursing Homes</i>	<i>304</i>	<i>245</i>	<i>283</i>
<i>Health Facilities for Elderly</i>	<i>205</i>	<i>188</i>	<i>220</i>
<i>Hospital LTC Beds</i>	<i>197</i>	<i>75</i>	<i>102</i>

Source: Campbell & Ikegami [2001]

The LTC market for elderly was estimated to have a total turnover of ¥ 8.4 trillion (\$ 70 billion) in the year 2000. This corresponds to around 1.5 per cent of GDP. The bulk of this is financed by public institutions (Ogawa [2001]).

4.5 The Supply Side

In 1999, there were 21,820 institutions offering care for the aged. Among these, some 8,000 were institutions offering permanent accommodation, 7,400 were offering daily services, there were 5,600 support centres and a few institutions (79) specialised on short-stay care. The expansion of long-term care that has taken place according to the Gold Plan is considerable: in 1993 there were less than 9,000 institutions offering long-term care (Japanese Ministry of Health, Labour and Welfare [2001]).

Until recently, private companies have not been allowed to operate nursing homes. Consequently, this sector has been dominated by voluntary non-profit organisations. According to a survey from 1996, 90 per cent of nursing homes were managed by non-profit organisations and the rest by local authorities. Even today, about 98 per cent of the beds are provided by public or non-profit organisations (Ogawa [2001]).

In community care, the picture is somewhat more mixed. Even in this case, non-profit and public providers have been dominating traditionally, but since the late 80s the number of private providers has increased. Private providers have the largest market share in services like ‘meals on wheels’ and transport service. According to figures from 1997, 5.6 per cent of home care service providers are private, 50.4 per cent are public and 33.8 are non-profit organisations (Ogawa [2001]).

When the private LTC insurance was introduced, several large for-profit corporations made huge investments in home services in the anticipation of increased demand due to the increased freedom to choose providers. However, recipients have proved to be more conservative than expected, and stayed with their former providers. This has incurred some losses on private corporations offering home care (Campbell & Ikegami [2001]).

4.6 Discussion

The Japanese LTC insurance represents an important break with Japanese traditions, and as such it is an interesting experiment. The design of the insurance is different to the German one in several respects; 1) it offers almost complete compensation and not just indemnity insurance, 2) its procedure for assessment of need is more sophisticated and 3) it only reimburses formal care.

These characteristics imply that the Japanese system solves some of the problems connected with LTC insurance. The almost complete coverage offered would certainly be preferred by risk-averse individuals to the partial coverage of the German system. Furthermore, the fact that the insurance is mandatory eliminates problems like adverse selection and free-riding. The problem of moral hazard will also be reduced due to the careful assessment procedure as well as the 10 per cent co-payment. The latter also encourages the individual to use cost-effective services.

On the other hand, the Japanese system might grow very costly (Mayhew [2001]). Japan is going to face a tremendous increase in the number of elderly, and as the retired population grows more and more wealthy, the 10 per cent co-payment might become less and less restrictive. Thus, a considerable increase in aggregate costs, albeit from a low level, may be expected over the next few decades. Since the working population is estimated to decline at the same time, the relative burden of LTC will grow even more. The risk of a rapid increase in costs is further augmented by the fact that informal care is not reimbursed at all, thus making formal care more attractive in comparison.

Furthermore, the rapid expansion of LTC services brings about some problems. Since there is a shortage of qualified workers in municipalities, assessment of need as well as care management is often delegated to providers. Consequently, incompatible tasks are sometimes carried out by the same person. This practice certainly threatens the integrity and objectivity of the assessment procedure. There is an incentive to up-code clients and to suggest only services that are provided by the own company. This could lead to an inadequate allocation of resources as well as an upsurge of costs.

5. Sweden

5.1 Background

Up to the first half of the last century, long-term care in Sweden was provided almost exclusively by families. Only for those lacking family members and financial means, municipalities offered care in public poorhouses.

Starting in the late 1940s, the public involvement in long-term care evolved from being aimed at poor elderly to a more general approach. Municipalities were obliged to offer care in nursing homes. This shift in responsibilities was followed by a revision of the law in 1956, after which adult children had no formal responsibilities for their parents.

Around 1950, the Swedish economy got overheated, and social reforms were brought to a standstill. Consequently, no more public nursing homes were built. To compensate for this, volunteer organisations started offering domiciliary care. This

care was not means-tested, but offered to all elderly in regions where these organisations were operating.

It soon turned out, though, that the volunteer organisations would not be able to carry out the expansion needed in domiciliary care. Thus, over the next decade, municipalities overtook ever more responsibility – from volunteer organisations as well as from family members. After government grants for domiciliary care had been introduced in 1964, a rapid expansion of these services took place (Söderström *et al* [2001]).

The public provision of domiciliary care peaked in 1978, with 352 000 clients. The number of places in public nursing homes reached its peak at about the same time. After that, the expansion of earlier decades has been reversed. In the 80s a retreat of public involvement in long-term care was driven by a marked improvement in the health status of elderly, improved living conditions as well as the awareness that there had been some oversupply in the 70s.

In the 90s, Sweden went through its deepest recession since the 30s. The economic crisis caused severe financial problems in the public sector. As a consequence, the reductions in public provision of long-term care continued, and care was concentrated on the most needy. At the same time, the Swedish model with public monopolies was challenged, and some municipalities introduced purchaser/provider organisations as well as voucher systems for domiciliary care. During the nineties, the share of private caregivers doubled.

5.2 Financing

Swedish long-term care is mainly financed by local income taxes. These taxes are the general income taxes charged by municipalities at a flat rate, averaging 20.57 per cent this year. Only a small share of the expenditures on long-term care is financed through out-of-pocket payments; according to the latest estimate by the government, this share is now approximately 5 per cent. Despite this, long-term care fees of different kinds make up a considerable share of the income for many elderly.

In addition to local taxes and out-of-pocket payments, the central government contributes to the financing of long-term care in three ways. Firstly, general government grants are paid to municipalities. This grant amounts to about SEK 50 bn. in 2001 (i.e. 2.5 per cent of GDP or SEK 6,000 per inhabitant (\$ 590)). Secondly, an age-related grant is paid, that amounts to SEK 6.7 bn. this year. Thirdly, there is a specific “cost adjustment” system for compensating municipalities with unfavourable demographic structures. A rough sketch of the principles of this system will be given below. In total, government grants make up 14.5 per cent of municipalities’ incomes (Swedish Association of Local Authorities/SALA [2001]).

The principles for out-of-pocket payments are regulated by law. In the law, it is stated that municipalities are allowed to charge fees for home-based as well as institution-based services. The freedom to design the fee structure is constrained by some principles. These principles are that fees should be *fair*, they may not exceed *production cost*, and they must leave a *personal expenses allowance* (“pocket money”).

There are no guidelines regarding fairness, but one practice is to enable the client to keep his ordinary flat some time after moving to a nursing home (SALA

[1997]). Since the share of out-of-pocket payments is so low, the production cost principle rarely is applicable. The personal expenses allowance shall guarantee that the client has a net income sufficient not only for personal needs but also for housing and health care costs. One target mentioned in the relevant government bill is that it should not be necessary to rely on social assistance to pay for health and long-term care.

In 1993, the rules applying to long-term care fees were changed, granting the municipalities a higher degree of freedom in designing the fee structures. This is a freedom that has been used; all municipalities have changed their rules since then (SALA [1997]). In practice, four different designs are being used:

- *Flat-rate fee.* Everybody pays the same amount regardless of personal income and quantity of services consumed.
- *Income-related fee.*
- *Fee related to consumption.* Fees may be fixed with reference to number of visit, duration of visits, specified services et c.
- *Income- and consumption-related fee.*

Studies that have been made show that there are massive differences between the municipalities with respect to out-of-pocket payments. These differences also seem to have increased over time. Furthermore, there are increasing differences in the charge for the same service *within* municipalities. This is due to the fact that ever more fees are income-related, and that the progressivity in these fees tends to increase (National Board of Health and Welfare [2000]).

To compensate municipalities with an unfavourable situation regarding the demographic structure, population density and other factors outside the municipality's own control, a system of risk adjustment is used, that redistributes resources between municipalities.

The risk adjustment system takes the variables age, sex, civil status and professional background into account. On top of that, it compensates for a high proportion of immigrants among the elderly, as well as for climate factors. The system has been criticised for several reasons; it is claimed to give municipalities perverse incentives, there are data problems in the cost calculations that make the outcome biased; furthermore, the climate factor is suspected to bring a political bias into the system since in Sweden, climate and political majorities exhibit a striking correlation (Karlsson *et al* [2000]).

5.3 Benefits

The responsibilities of municipalities as regards LTC are regulated in the Social Services Act. It states that everybody who is in need has a right to home-based or institution-based care. Municipalities are further obliged to actively investigate needs in the local population, and to promote good living conditions in other ways. The Social Services Act explicitly states that it shall be made possible for elderly to stay at home and live independently as long as possible (Karlsson *et al* [2000]).

Municipalities offer home help services, daytime community activities and similar social services to assist elderly living at home. Since 1992 municipalities also

are responsible for local nursing homes and some other care institutions. At the same time, a new general term was introduced for all kinds of accommodating institutions under the responsibility of municipalities: special forms of accommodation. This term includes service flats, old peoples' homes, sheltered housing and nursing homes. Furthermore, municipalities and county councils have a mutual responsibility for rehabilitation and providing technical aids (National Board of Health and Welfare [2000a]).

Despite its high degree of reliance on formal care, the amount of informal care being provided in Sweden is considerable. It has been estimated that the amount of help given by relatives to older people living at home is more than twice the amount given by local authorities. To support such care, municipalities in some cases employ the carer, or offer the client a grant to pay relatives for care at home (National Board of Health and Welfare [2000a]).

5.4 Coverage

Since municipalities are obliged to provide long-term care for everybody in need, the whole Swedish population is covered by the public system. Despite this, the increased mobility among elderly has posed some problems to the Swedish system lately.

In the year 2000, about 250 000 people 65 years of age and older received some kind of long-term care, corresponding to 16.1 per cent of the entire elderly population. It is apparent that the need for care is highly age-related even among the elderly; among those 80 years of age and older not less than 39.7 per cent received some kind of long-term care last year. The trends over the 90s are pictured in. It is clear that the trend to scale down public long-term care has continued during the nineties. Furthermore, the share of LTC going to the oldest group has increased throughout the period.

In domiciliary care, a restructuring has been observed in the nineties, where efforts have been concentrated to the most severe cases. Thus, the number of elderly with weekly services amounting to 1-9 hours a month decreased significantly, whereas the share with services exceeding 50 hours increased. In *Table 8*, a comparison between 1992 and 1997 makes this clear. These trends have been accentuated after 1997 (National Board of Health and Welfare [2001]).

Thus, in the nineties there have been two counteracting trends in domiciliary care; firstly, a trend to decrease the number of recipients, and secondly, a trend to concentrate on severe cases. The net effect, at least in the last few years, has been positive – between 1998 and 2000 the total number of service hours increased by 3.3 per cent (National Board of Health and Welfare [2001]).

Table 7. Recipients of Long-Term Care in Sweden 1993-2000

Year	Age 65-						Age 80-					
	Domi- ciliary care	%	Insti- tution- based care	%	Total	%	Domi- ciliary care	%	Insti- tution- based care	%	Total	%
1993	149,650	9.7	121,340	7.9	270,990	17.6	92,181	23.2	89,433	22.5	181,614	45.7
1994	145,034	9.4	128,553	8.4	273,587	17.8	90,665	22.2	94,855	23.2	185,520	45.5
1995	137,572	8.9	129,843	8.4	267,415	17.3	86,653	20.9	96,058	23.2	182,711	44.1
1996	129,543	8.4	127,012	8.2	256,555	16.6	82,956	19.7	94,509	22.5	177,465	42.2
1997	130,059	8.4	130,725	8.5	260,784	16.9	84,788	19.8	97,715	22.9	182,503	42.7
1998	126,049	8.2	118,715	7.7	244,764	15.9	84,253	19.5	90,787	21.0	175,040	40.5
1999	129,479	8.4	116,254	7.6	245,733	16.0	85,217	19.5	88,623	20.3	173,840	39.8
2000	125,324	8.2	121,305	7.9	246,629	16.1	86,070	19.0	93,717	20.7	179,787	39.7

Source: National Board of Health And Welfare [2001].

Table 8. Trends in Domiciliary Care between 1992 and 1997

Hours/ month	1992		1997		1992-1997		
	N	%	N	%	ΔN	$\Delta\%$	Rel. change (%)
1-9	74,935	40.1	57,651	35.7	-17,284	-4.4	-23
10-49	48,633	26.0	38,869	24.1	-9,764	-1.9	-20
50-119	30,599	16.4	27,445	17.0	-3,154	+0.6	-10
120-199	26,197	14.0	30,024	18.6	+3,827	+4.6	+15
200-	6,489	3.5	7,582	4.7	+1,093	+1.2	+17

Source: National Board of Health and Welfare [2001].

The figures presented so far conceal the fact that there are considerable differences between municipalities as regards coverage and general focus of long-term care services. *Table 9* shows the coverage of long-term care in municipalities with the highest and the lowest cost per elderly. As might be noted, costs also vary significantly, and the differences are not completely attributable to differences in need (Karlsson *et al* [2000]).

The total cost for publicly financed long-term care was SEK 63.8 bn. (\$ 6.2 bn.) in 1999 (3.2 per cent of GDP). Out of this, the main part was made up by institution-based care (73.7 per cent); home-based care accounted for 24.1 per cent and taxi services 2.1 per cent. Throughout the nineties, the share of institution-based care has increased, and the share of taxi services has decreased significantly (Swedish Ministry of Health and Social Affairs [1999]).

Table 9. Cost and Coverage of Long-Term Care in some Swedish Municipalities 1999

Municipality	Cost \$ ¹⁰ per 65+	Home-based Care Share of Population		Institution-based Care Share of Population		Share of Elderly in population	
		65-79 yrs	80-w yrs	65-79 yrs	80-w yrs	65-79 yrs	80-w yrs
Gällivare	7,113	4.0	16.4	3.3	28.9	13.9	4.2
Nordmaling	6,915	5.1	17.4	3.2	26.7	15.1	6.4
Boden	6,845	2.8	12.8	2.9	25.9	13.3	4.9
Kiruna	6,757	5.7	25.2	3.1	22.8	12.2	3.0
Härjedalen	6,737	5.1	24.3	3.1	21.7	16.5	7.5
Nat. average	4,983	3.5	18.3	2.6	21.6	13.5	5.3
Nacka	3,350	4.4	21.2	1.4	12.5	9.2	3.5
Båstad	3,345	1.5	14.1	1.5	17.5	16.1	7.2
Håbo	3,283	2.7	25.3	3.7	29.5	6.7	1.4
Järfälla	3,264	2.8	15.2	2.6	19.4	10.0	2.4
Sigtuna	3,178	2.7	15.6	1.2	10.0	8.5	2.3

Source: SALA (2000)

The Swedish system is designed so as to avoid having elderly dependent on social assistance. Thus, the national pension scheme, together with housing allowance – provides what is considered to be a satisfactory living standard for all elderly. Furthermore, it has been the intention of the legislator that out-of-pocket payments for long-term care should take the economic situation of the client into consideration, so that nobody has to rely on social assistance when consuming long-term care services.

Nevertheless, there has been increasing concern regarding a small group of elderly who are not sufficiently covered by the national pension scheme – that requires 40 years of residence to qualify for full pension. In 1998, 10 700 elderly (some 0.6 per cent of the retired population) were dependent on social assistance for 10 months or more. Out of these, 94 per cent were immigrants. Moreover, the central government has noticed that the out-of-pocket payments in some municipalities leave too little for personal expenses and that they create perverse incentives.

To remedy these problems, some changes in the legislation have been announced recently. Firstly, the central government is introducing a new transfer scheme that will guarantee all elderly a sufficient minimum income. Secondly, the freedom for municipalities to design their local fee structures will be limited. A ceiling of 1,500 (\$ 150) will be put on monthly payments. Furthermore, the personal expenses allowance will be regulated in law.

¹⁰ Exchange Rate per 01.07.99: 0.11784.

5.5 The Supply Side

Until the early nineties, Swedish long-term care was almost exclusively provided by local public monopolies. Private provision was limited to some complementary services like cleaning. There was also a broad political consensus that health and long-term care should be publicly provided.

In the early nineties, private entrepreneurs were allowed into the market for long-term care. In the first few years, a rapid expansion of private care took place; the share of private entrepreneurs in the municipal budgets for long-term care quadrupled. This trend has continued at a somewhat slower pace throughout the nineties, and to date there are no signs of weakening (Söderström *et al* [2001]).

The impact of this change becomes clear if the shares of clients who are served by private caregivers are studied. These figures, which are given in *Table 10*, show that private caregivers more than doubled their share after 1993. Some caution is required regarding the figures for 1998 and 1999, since data are not of the same quality as for other years. Thus, the development of private care might well have been monotonously increasing during the period.

Table 10. Shares of Clients being assisted by Private Caregivers between 1993 and 2000

Year	Home-based care	Institution-based care
1993	3.6	5.4
1994	3.4	7.1
1995	3.9	8.3
1996	3.3	9.3
1997	4.2	10.2
1998	n.a.	9.8
1999	6.0	9.7
2000	7.3	11.6

Source: National Board of Health and Welfare [2001].

However, there are vast regional differences also in this case. The emergence of private caregivers is restricted to metropolitan areas and some larger towns. This might be illustrated by the fact that last year, in the city of Stockholm, private caregivers were responsible for 39.0 per cent of institution clients, whereas the corresponding share was 6.6 per cent in Jönköping (117,000 inhabitants) and zero in the small town Eskilstuna (National Board of Health and Welfare [2001]).

At the same time as private caregivers have acquired an ever larger share of the long-term care market, there has been a tendency to restructuring among these caregivers. Nowadays, the market is dominated by nine big companies that provide some 70 per cent of total private care. In the last few years, these companies have started to establish their own institutions, instead of simply assuming the management of public institutions. This trend has been coupled with a tendency to sign long-term contracts with municipalities, so that the business of private caregivers has become more predictable.

The introduction of private caregivers was motivated by the wish of local politicians to increase efficiency and to contain costs. The experiment seems to have been successful so far; cost-awareness obviously has increased in many municipalities. In the beginning, there was occasionally some worries that private caregivers would provide inadequate care, but the hair-raising examples presented in the press seem to have had more to do with bad contracting practices than with the private management in itself (Söderström *et al* [2001]).

One aspect that has been neglected, though, is the freedom of choice of the individual client. So far, purchaser/provider-arrangements, which leave little scope for the client to choose his preferred provider, have been dominating completely. In recent years, though, some municipalities have launched voucher systems that give the client an option to choose between several private and public providers. One of the pioneers in this field is the prosperous Stockholm suburb Nacka that introduced a voucher system for home-based care already in the early nineties. The city of Stockholm has recently started to introduce an ambitious voucher system for home-based as well as institution-based care.

5.6 Discussion

Three distinct trends have been observable in Swedish long-term care during the nineties. Firstly, public services are concentrated on the oldest and those with most need. Secondly, responsibility for care has been decentralised: from regional bodies to municipalities, and from municipalities to the families of the clients. Thirdly, the share of private caregivers has increased rapidly. These changes are mainly a response to the harsh economic conditions that the severe economic crisis of the nineties posed. The crisis does not seem to have represented a serious threat to Swedish welfare, though; Sweden still offers long-term care services more generously than other countries.

The dominant role played by the local authorities implies that some problems of insurance markets – such as adverse selection – are avoided. At the same time, co-payments of clients, that are normally related to the amount of services consumed – serve to reduce moral hazard and promote a rational allocation of resources.

On the other hand, the low degree of competition in the LTC service sector probably leads to inefficiency. The motivation for the traditional reliance on public services in Sweden has been the ideological conviction that the same services should be offered to the whole population, regardless of financial status. However, the large and increasing differences between municipalities with respect to coverage of services, principles for calculating out-of-pocket payments and principles for assessing need, represent important deviations from this ideological standpoint.

For the future, it is mainly the financing system that is being discussed. This is largely due to the restraints that an ageing population will put on this generous system, but also because local responsibility for LTC is considered to be outdated. In a time where mobility is increasing rapidly, the Swedish system with local responsibility seems inadequate, not the least since public long-term care also represents an intergenerational transfer. Furthermore, the huge regional differences between municipalities are regarded to be inequitable. Since, finally, there is some concern that the cost adjustment system is inadequate, there have been several

proposals for national responsibility or social insurance solutions in the last few years (Karlsson *et al* [2000]).

6. United States

6.1 Background

Contrary to common conceptions, the United States had a quite ambitious social welfare programme for elderly already around the last turn of the century. At this time, more than one quarter of federal expenditure was dedicated to pensions for Civil War veterans and their families. The reason why this programme often has been neglected is probably that these expenditures were disguised as military expenses.

Despite this, the United States never developed a welfare state like ones in Western Europe. There might be several reasons for this, but the most important is probably the diversity of the American working class, as well as landmark decisions by the Supreme Court. Thus, one can distinguish three distinct social reform waves from a century otherwise characterised by widespread antipathy against generous welfare arrangements.

The first reform wave was Franklin D Roosevelt's *New Deal*, initiated in the early thirties. The New Deal built on three main pillars: the Federal Emergency Relief Administration, providing benefits for unemployed; public works to reduce unemployment; and the *Social Security Act* of 1935, including unemployment insurance and a pension insurance that would eventually cover most working Americans. According to its left wing critics, the New Deal introduced the still characteristic distinction of American welfare between general social insurances and stigmatising social assistance programmes.

The second reform wave started with Lyndon B Johnson's *War on Poverty* that was initiated in 1964. One guiding principle in Johnson's social reforms was to offer "a hand up, not a hand out". Thus, reforms were mainly aimed at offering education and labour market programmes. At the same time, expenditures on social assistance programmes were allowed to increase. Furthermore, the Social Security Act was complemented by *Medicare* and *Medicaid* in 1965, two programmes designed to increase access to medical services.

At the beginning, the Medicaid programme was almost completely focused on institutional care. Since then, a marked increase in home care services has taken places. This expansion of home services has rather been the result of many incremental changes, than a comprehensive plan.

Long-term care makes up a small but increasing part of public spending in the United States. Interestingly, long-term care has turned Medicaid, originally a public programme aimed at the poor, into a programme of more general coverage (Carlson [2000]).

6.2 Financing

In the United States, funds for health and long-term care for elderly is provided from public as well as private sources. Public funding is granted by the

Medicaid and Medicare programmes; and the private element consists of private insurance as well as out-of-pocket payments.

Medicaid is a tax-based programme designed for low-income earners. It covers hospital care as well as home care. To be entitled to benefits, one has to have insufficient financial means, defined as having income and assets low enough to qualify for Supplementary Security Income; i.e. earnings less than \$ 532 per month and non-housing assets less than \$ 2000 (Feder *et al* [2000]). The limits for eligibility, as well as the scope of services covered, are set on a state level and thus vary across states. In most states, Medicaid covers costs for residential care. Even if the Medicaid programme was not originally designed to concentrate on help to elderly, it has evolved into an important pillar for long-term care financing (Edebalk & Svensson [2000]). Because of the high cost of nursing home care, 2/3 of residents end up relying on Medicaid.

Medicare is a national social insurance programme. Contributions are paid either as ‘Medicare tax’ while working, or by completing premiums after retirement. The Medicare tax amounts to 2.9 per cent of yearly income: half of it is paid by the employer and half by the employee. There is no upper limit to the tax base.

The Medicare premium amounts to \$300 per month this year, or \$165 for those individuals having 30-39 quarters of Medicare covered employment. To be entitled to benefits from Medicare, one has to contribute for 40 quarters. A majority of the workforce does not pay any premium, though, since they or their spouses already have 40 or more quarters of Medicare covered employment. Furthermore, those who are eligible for premium-free hospital insurance in other ways do not have to pay Medicare premium. The Part B premium is \$50 per month (Health Care Financing Administration/HCFA [2001]).

In recent years, a private market for long-term care insurance has emerged in the United States. Private insurance companies – there are more than 100 of them – offer complementary insurance for costs related to long-term care. These insurances are designed for cases where benefits from Medicare have been exhausted, and where the insured is not entitled to Medicaid benefits. Insurance is voluntary, and has normally been taken out individually.

Before signing up, the policyholder goes through a medical examination. The insurance company also requests information regarding the customer’s consumption of medical services, his or her lifestyle and physical or psychical disabilities, if any. Contributions are based on these data, and sometimes they become prohibitive. Estimates show that as much as 20 per cent of the elderly population would be refused long-term care insurance (Edebalk & Svensson [2000]).

In 1997, individual policies without an inflation adjustment feature ranged in cost from about \$250 per year to more than \$3,900. Inflation adjustments can add 40 percent to 140 percent to that premium, depending on the option one selects, but they keep benefits in line with rising costs. Costs vary considerably with age; for a 50-year-old, a policy offering a \$100 per day nursing home benefit for four years, with a 20-day deductible, would cost about \$364 per year. For someone who was 65 years old, the same policy cost about \$980, and for a 79-year-old, the cost would be \$3,907 (Health Insurance Association of America/HIAA [1999]).

6.3 Benefits

In most states, *Medicaid* covers nursing home costs. Regarding home and community care, there are differing standards. The law only obliges states to offer home health care; personal services are optional. Some state Medicaid programs do not offer these services (Amaradio [1998]). Since 1994, states have quite wide-ranging freedom to “waive” certain federal rules – i.e. limit access, target on selected areas or groups – in providing personal services (Feder *et al* [2000]). Most states use this freedom and target services such as home modification, homemaker services, habilitation and respite care to low-income elderly (Lutzky *et al* [2000]).

Medicare compensates nursing home costs, if the insured has been treated in a hospital at least three days. Medicare only reimburses costs for doctors’ and nurses’ services. Home care is only provided if the client needs skilled nursing care and is homebound. However, for clients meeting the requirements, personal care services may be provided as well. Medicare home services are provided for free (HCFA [2000])

Medicare benefits have a time limit. Hospital stays are only covered the first 60 days. Nursing home costs are only covered the first 20 days; after that, a certain fraction of the costs are covered for another 80 days. Thereafter, the insured cannot get any benefits from Medicare. Since 1983, Medicare offers hospice care. Hospices provide care for elderly with a terminal illness and a remaining life expectancy of less than 6 months (Amaradio [1998]).

Benefits offered by private long-term insurances vary. Some only include nursing home care, whereas others only cover home care. Typically, only care given by nurses or doctors is covered. Normally, insurances offer a fixed per diem compensation if care is needed. Benefits are paid for a limited time; e.g. five years or remaining life years (Edebalk & Svensson [2000]).

6.4 Coverage

Since Medicaid is offered to all who lack sufficient financial resources, coverage is theoretically universal. Regarding Medicare, 33.9 million elderly were enrolled in 1999, out of a population of about 35 million (HCFA [2001]). The market for private long-term insurance has grown considerably the last fifteen years. In 1987, 815,000 policies had been sold, and in 1998 that figure had increased to 5,842,000 – a growth rate of 21 per cent per year on average. Still, private policies only cover a small fraction of the population (Tilly *et al* [2001]).

The total number of needy was in 1995 estimated to around 12 million, with 6.6 million being 65 years of age or older (Feder *et al* [2000]). The majority of LTC is provided by family members, though. According to the 1994 National Long-Term Care Survey, though, 16.7 per cent of the elderly population was receiving long-term care, either community or institutional. Specific figures for different sub-groups are given in *Table 11*.

Table 11. Receipt of Community and Institutional Long-Term Care (LTC) among the Elderly, 1994

	Elderly Population (thousands)	Per cent receiving Long-Term Care		
		Total	Community	Institution
Persons Aged 65+	33,127	16.7	11.8	4.9
Age				
65-69	9,815	6.5	5.7	0.8
70-74	8,787	9.7	7.9	1.8
75-79	6,553	15	11.5	3.5
80-84	4,348	27.1	19.3	7.8
85-90	2,450	43.2	26.1	17.1
90-94	889	66.7	35.5	31.2
95+	285	80.5	37.4	43.1
Gender				
Female	19,715	19.9	13.7	6.2
Male	13,412	12.1	8.9	3.2
Race.				
White	29,837	16.2	11.1	5.1
Black	2,651	24.4	20.3	4.2
Other	639	11.2	9.7	1.5
Marital Status				
Married	17,662	10.7	9.3	1.5
Widowed	11,338	26.2	16.5	9.7
Never married	1,353	24.1	11.1	13
Other	2,773	12.7	8.9	3.7

Source: AHRQ (2000).

It is clear that consumption of long-term care services is highly age-dependent also within the elderly population. The share of recipients increases from 6.5 per cent among those aged 65-69, to more than 80 per cent among those aged 95 or more. Apart from that marital status seems to be a very important predictor of long-term care need.

In *Table 12*, some trends in long-term care can be observed. It shows that although the number of long-term care recipients among the elderly remained more or less constant between 1984 and 1994, their share of the elderly population declined. During the same time, the level of disability among recipients increased significantly, which is reflected in the fact that formal care and institutional care gained in importance compared to other forms of care.

Table 12. Characteristics of Elderly Long-Term Care Users 1984 and 1994

	1984	1994
Persons Aged 65 and Older (<i>thousands</i>)	27,968	33,127
Number of Users (<i>thousands</i>)	5,504	5,537
Percent of All Elderly	19.7	16.7
Mean Age (<i>years</i>)	79.2	80.5
<i>Percent Distribution by Characteristic</i>		
Gender		
Female	67.3	70.7
Male	32.7	29.3
Race		
White	87.1	87
Black	11.4	11.7
Other	1.4	1.3
Marital Status		
Married	34.9	34.1
Widowed	52.7	53.6
Never married	7.8	5.9
Separated/divorced	4.7	6.4
Service Use		
Informal care only	51.2	40.1
Both informal and formal care	19.3	25.7
Formal care only	3.8	4.6
Institutional care	25.6	29.6

Source: AHRQ (2000).

The use of home health care by persons 65 years of age and older changed dramatically in the 90's. Between 1992 and 1996, the rate of home-based care usage among persons 65 years of age and older increased 78 per cent (from 295 patients per 10,000 population to 526 per 10,000 population). Between 1996 and 1998, the rate of home-based care usage among elderly fell to 378 patients per 10,000 population due to funding changes that were part of the 1997 Balanced Budget Act. In 1999, new funding legislation was passed, and use of home-based care is expected to rise again (Sahyoun *et al* [2001]).

States have tried to keep spending on long-term care down through limiting the number of nursing home beds available. Furthermore, states decide on the reimbursement rates for Medicaid-financed nursing home beds. One possible consequence of this is that 20 per cent of elderly living in the community report being unable to get the amount of care they need. Among the elderly living in community, 25 per cent are severely disabled with more than three ADLs hindered (Feder *et al* [2000]).

It is hard to get a clear picture of aggregate costs for LTC in the United States, because different sources provide different estimates. One estimate for 1998 is that total spending amounted to \$ 117 billion (1.3 per cent of GDP), with about 80 per cent going to the elderly. According to Feder *et al* [2000], some \$ 100 billion were spent on institutional LTC last year, and another \$ 50 billion on home services. Thus,

although home services have been expanded a great deal recently, nursing home care still is the dominant component of American LTC.

Spending on long-term care for elderly has increased continuously the last decades. One estimate of the shares of the different sources of funding is given in *Figure 2*. Anyhow, even in this case, there is some uncertainty concerning the exact shares. However, these shares seem to have been quite stable over the last decade; the exception being private insurance, that has increased its share from one per cent in 1993 (Feder *et al* [2000], Tilly *et al* [2001]).

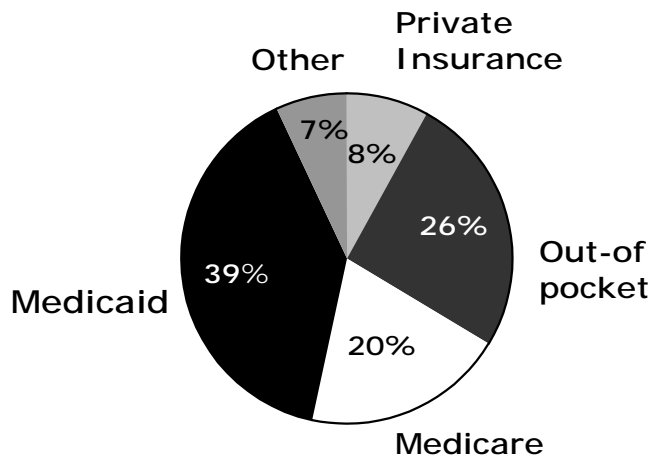


Figure 2. Long-Term Financing, By Payer, 1998.

Source: Feder et al (2000)

6.5 The Supply Side

In 1998, there were 17,458 nursing home facilities in the United States; an increase by 22 per cent since 1978. During the same time, the average size of nursing homes increased, so that the total number of beds increased by 38 per cent. These increases are offset by a marked increase in the number of elderly, though, so that the number of beds per 1,000 population aged 65 and over declined slightly, to 52.5 in 1998 (and the corresponding figure for those aged 85 and over declined sharply).

Among the nursing homes, about two thirds are owned by for-profit companies, whereas slightly less than 30 per cent are owned by non-profit organisations. The rest – 6.7 per cent – are government owned. These figures have been fairly stable in the 1990s. There are great differences between states, though; in Alaska, 57.1 per cent of nursing homes are owned by non-profit organisations, while merely 12.9 per cent are non-profit in South Carolina (Harrington *et al* [2000a]).

Beside the nursing homes, there are community-based providers, whose residential services expanded during the 1990s. There were 51,227 licensed facilities of this kind in 1998 (a 45.7 per cent increase since 1990). The ratio of licensed residential care beds serving aged was 25.5 care beds per 1,000 population aged 65 and over in 1998. These ratios varied widely across states (Harrington *et al* [2000]).

There were a total of 13,537 licensed home health care agencies in the U.S. in 1998. The average ratio of licensed home health care agencies per 1,000 population aged 65 and over was 0.47 in 1998. This ratio varied considerably across states. For the first time, a decrease in the number of home health care agencies could be noted in 1998. This drop was probably due to changing funding principles in the Balanced Budget Act of 1997. Ten states did not use licenses, but certificates of agencies for participation in Medicare and Medicaid. The number of certified agencies in these states amounted to 9,726 in 1998.

6.6 Discussion

The financing of LTC is a very hot issue in the United States. The weaknesses of the existing system has gained increasing attention, and there is widespread concern that LTC may become problematic under the burden of ageing.

The means-testing of most public LTC benefits in the United States means that a large fraction of the population has to find insurance against LTC costs in a market that seems to be deficient. The high costs involved in LTC make free-riding an attractive option for income-earners even in relatively high income strata. This thins out the market for private LTC, making policies more expensive. Furthermore, considering the high age at which private LTC insurance is purchased (69 on average), adverse selection might be a serious problem. Finally, the fact that LTC insurance is normally bought individually is another factor that tends to increase costs. Thus, it might be hard for many Americans to acquire appropriate coverage of LTC costs at a reasonable price.

Two specific issues that are being discussed are how to promote private LTC insurance and how to deal with Medicaid spending down. It has been suggested that private-public partnerships – combining exemptions from Medicaid rules with tax subsidies – would encourage people to buy private LTC insurance. On the other hand, estimates show that as many as 20 per cent of the elderly population might be denied private insurance (Murtaugh *et al* [1995]), and furthermore there are worries that tax subsidies simply help those who would have purchased insurance anyway (Feder *et al* [2000]).

One of the main problems in the American LTC system is the lack of co-ordination between federal and state authorities. This split of responsibility creates incentive to shift costs, above all on the part of the states, that try to get as much LTC as possible covered by the Medicare program. Because of this problem, the expansion of LTC services looks very unsystematic when compared to other countries. The rapid increase of home care services paid by Medicare has not been planned but is rather the result of reduced policy guidance (Feder *et al* [2000]).

Regarding cost containment, the American system is effective, since it restricts benefits to those that are financially needy. On the other hand, the divided responsibility between different programs makes it harder to achieve a rational allocation between different kinds of care.

7. Comparative Analysis

In this section, findings from previous chapters are summed up, and the distributive aspects of various LTC systems are studied in more detail.

7.1 General Characteristics

In *Table 13*, a summary of characteristics of publicly regulated LTC systems is given. The table should be read as follows: ‘financing’: how public funds are raised, ‘provision’: the normal kind of provider, ‘means-testing’: whether eligibility is dependent on the financial status of the client, ‘level of responsibility’: the most important government level responsible for LTC, ‘benefits’: whether in-kind, in-cash or both, ‘freedom of choice’: whether it is possible to choose between different providers within the public system.

Table 13. Characteristics of LTC Systems

Country	Financing	Predominant Provider Type	Means-Testing	Level of Responsibility	Benefits	Free Choice of Provider
Germany	Social Insurance	Private, non-profit	No	National	In-kind, Cash	Yes
Japan	Social Insurance & Taxes	Private, non-profit	No	Local	In-kind	Yes
Sweden	Taxes	Public	No	Local	In-kind	No
United States	Social Insurance & Taxes	Private, for-profit	Yes	Regional	In-kind	No

The information in *Table 13* is approximate, since there are often exceptions from the general picture (for instance, there is a small portion of Swedish LTC being provided by private companies). However, it is clear that even with these simplifications, the design of a national LTC system is not a one-dimensional issue. Among the countries studied here, one could argue that Sweden and Germany represent two different classic types for LTC financing: Sweden being an almost purely tax-based system, whereas German LTC reflects its tradition with a purely ‘Bismarckian’ social insurance. Furthermore, the United States might be regarded as being close to another ideal type, since it relies as much as possible on private financing. Japan, on the other hand, mixes principles from different models.

7.2 Trends

In the last ten years, the LTC systems in this paper have gone through important changes. But do the changes go in the same direction? A summary of trends in national LTC systems is given in *Table 14*.¹¹ The first row shows the development of total LTC costs as a fraction of GDP. The process of aging has increased LTC costs in all countries. One exception is possibly the United States, where the extraordinary growth rate in the nineties might have compensated for the increase in LTC spending, so that its share of GDP remains more or less constant. The second row, showing public LTC expenditure as a share of GDP, draws basically the same picture. On the other hand, the share of public cost in total cost has been decreasing in Sweden, contrary to the three other countries.

Table 14. Trends in National LTC Systems in the 90s

		Germany	Japan	Sweden	USA
Cost/GDP		+	+	+	0
Public Cost/GDP		+	+	+	+
Public Cost/Total Cost		+	+	-	n.a.
Nursing Home Population	<i>Absolute</i>	+	+	0	+
	<i>Relative</i>		+	0	-
Home Care Recipients	<i>Absolute</i>	+	+	-	+
	<i>Relative</i>		+	-	+

Table 14 also gives an account of the coverage of LTC services. Even in this case, Swedish trends are different from those of the other countries. In Germany, Japan and the United States, the nursing home population has increased in absolute numbers, whereas it has been more or less constant in Sweden. If this population is compared to the total elderly population – labelled ‘relative’ in *Table 14* – the picture is less clear. In the United States, the number of nursing home beds per capita has decreased, in Sweden it has remained more or less constant, and in Japan it has increased. Regarding home care, Sweden has contracted services at the same time as the other countries have expanded them.

7.3 Distributional Impact

One of the most important aspects of a LTC system is how it influences the distribution of resources between different groups in society. The financing and provision of LTC brings three important distributional conflicts to the fore: between high- and low-income earners, between men and women, and between different generations. Thus, we wish to analyse the distributional impact of various systems in all these three respects.

¹¹ Figures from the early nineties (OECD [1999]) have been compared with the most recent national statistics available.

7.3.1 Method

There are important differences between countries that make a distributional analysis of LTC systems complicated. Different definitions of need are used in different countries, and the procedure to measure need varies. Furthermore, the systems vary in their generosity at a given level of need. There are also important differences in the degree of utilisation of services by the disabled; a fact that is especially relevant in the case of the new Japanese LTC insurance. Finally, within some countries there are important regional differences that makes a fair comparison even more problematical.

In the following, these kinds of differences will be disregarded, and the analysis will instead be focused on how stylised versions of the systems work. A cost-benefit analysis is undertaken for some hypothetical cases that are exposed to the various national systems (or rather approximations of them). These persons are assumed to have the same characteristics no matter what country they live in: they earn the same wage, face the same risks of being disabled or dying, and have the same family patterns. Some characteristics of the model cases are given in *Table 15*.

Table 15. Model Assumptions

	Male			Female		
	<i>High Income</i>	<i>Average Income</i>	<i>Low Income</i>	<i>High Income</i>	<i>Average Income</i>	<i>Low Income</i>
<i>Starting income</i>	41,000	25,000	20,000	38,000	23,000	16,000
<i>Annual Increase</i>	1,400	800	370	460	300	60
<i>Work time (age)</i>	24-64			30-60		
<i>Prob. Intermediate disability</i>	EXP(-7.50+AGE*0.0585)			EXP(-7.10+AGE*0.0550)		
<i>Prob. Severe disability</i>	EXP(-6.05+AGE*0.0474)			EXP(-5.83+AGE*0.0491)		

The first three rows in *Table 15* describe the earnings trajectories for the six hypothetical persons. The ‘average income’ cases – for both sexes – are made as a linear fit to actual American earnings data (U. S. Census Bureau [2000]). The ‘high income’ and ‘low income’ cases correspond to a worker with a university degree and a worker without high school diploma, respectively. Assumptions regarding work time are chosen arbitrarily, but should reflect the fact that women normally have a shorter working life than men. Men are assumed to work between 24 and 64, women between 30 and 60. After retirement, all individuals receive a pension that is 75 per cent of the wage at 55 – a replacement ratio that is a good approximation for most developed countries (Feder *et al* [2000]).

The disability data used are based on an in-depth survey carried out in the UK during the 1980’s (OPCS [1988]). In the same manner as in Mayhew [2000], an exponential curve is fitted to the age-specific disability data. This gives a reasonable approximation of the actual prevalence of disability in different age groups. The OPCS data divides people into ten categories, ranging from 1 (least disabled) to 10 (most disabled). For simplicity, these categories are grouped as follows: ‘least severe’ (1 to 4), ‘intermediate severity’ (5 to 7), and ‘most severe’ (8 to 10).

The OPCS survey also presents sex-specific data, but these are defined over three different age groups only and thus are not totally compatible with the comprehensive data. The differences between the sexes for two different severity

levels are presented in *Figure 3*. It is clear that the prevalence of disability among females is generally higher. Furthermore, the ratio between prevalence figures for men and women is relatively stable for intermediate disability, whereas it varies somewhat more for severe disability. To capture the differences between men and women, a ‘disability function’ was estimated for the sexes separately. The resulting probability estimates get very close to the comprehensive figures, despite the lesser precision in the data. The possibility of disability before the age of 24 is not taken into account, and it is assumed that nobody lives beyond the age of 100.

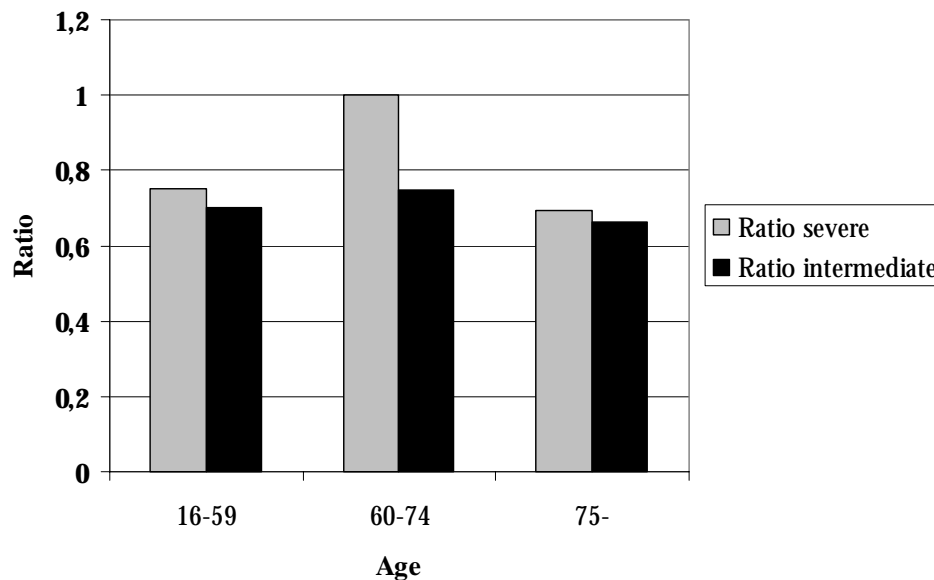


Figure 3. Male Prevalence of Disability Compared to Female.

Finally, American life tables are used to calculate the mortality at different ages (Social Security Administration [2000]). It is assumed that probabilities of disability are independent, and also that they are not correlated with income.

7.3.2 Calculation of Costs and Benefits

It is assumed that the cost of care is the same in the four countries (which seems to be a reasonable approximation). Furthermore, it is assumed that there is no heterogeneity within the two disability groups: thus, ‘severe disability’ always corresponds to a need for full-time care in a nursing home, and ‘intermediate disability’ is assumed to correspond to a need for home care of 30 hours per month. The costs associated with these amounts of care are \$ 40,000 and \$ 6,000 per year, respectively, according to Feder *et al* [2000].

These figures, together with the disability data can be used to calculate the total costs that would be payable in the event of nursing care being required. The calculation of the present value of total nursing home costs is straightforward:

$$PV_{NH} = \sum_{i=24}^{100} a_i p_{s,i} \cdot NHC / (1+r)^{i-24}$$

where a_i represents the probability to be alive at age i , $p_{s,i}$ is the age-specific risk of severe disability, NHC is the cost of nursing home care, and r is the discount rate.

Regarding home need for home care, the issue is trickier, since informal care might be a close substitute. The number of potential informal carers could be calculated in accordance with Mayhew [2001]. However, data of age-specific consumption of home care services in Sweden and the USA indicate that the ‘intermediate disability’ predict the consumption of home care services quite well (AHRQ [2000], National Board of Health and Welfare [2000b]). Consequently, we disregard the impact of informal care and calculate the present value of home care services according to the following formula:

$$PV_{NH} = \sum_{i=24}^{100} a_i p_{s,i} \cdot HC / (1+r)^{i-24}$$

These two equations give the total present value of LTC costs over an individual’s lifetime that would need to be met from a person’s own pocket and from an insurance provider. However, there are different rules for how these costs are reimbursed in the different countries, and the principles of financing are different. The *public benefit* that the individual is entitled to is calculated in accordance with the system in each specific country – i.e. in the U.S. it is means-tested, in Sweden all costs are covered less an income-related fee etc. All details on how benefits are calculated are given in Appendix 1.

The public benefits are financed by means of taxes, user charges, and social insurance premiums. To calculate the costs and benefits for the different cases used here, an approximation of the actual rules in each country was used. Details can be found in Appendix 1.

7.3.3 Results

To illustrate the workings of the different systems, some representative pictures of the stream of benefits and costs over a lifetime are given for a Swedish and an American man (*Figure 4* and *Figure 5*). The X-axis covers the individual’s entire life span, and on the Y-axis are measured expected benefits, in the form of help with LTC costs, and costs based on taxes or similar contributions in U.S. dollars.

In Sweden, the public sector plays a much more important role, which is reflected by the high amount of payments (taxes) as well as benefits (total costs less out-of-pocket payments). In the United States, a man with an average income can only expect some Medicare benefits in home care, marginal Medicare benefits in nursing home, as well as Medicaid benefits after spending down personal income and assets. According to our assumptions, the risk of spend-down is comparatively low for this individual, and thus expected benefits are very small compared to the Swedish counterpart. The drop in costs at 65 is due to the fact that LTC is financed mainly out of taxes in both countries, and retired people pay less tax. Furthermore, retired Americans do not have to pay Medicare taxes.

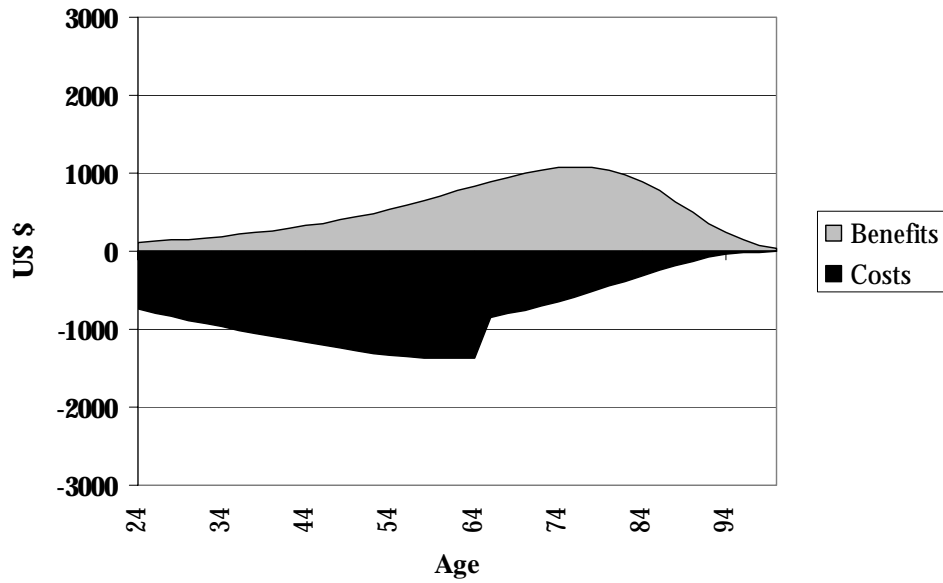


Figure 4. Costs and Benefits, Male Swede.

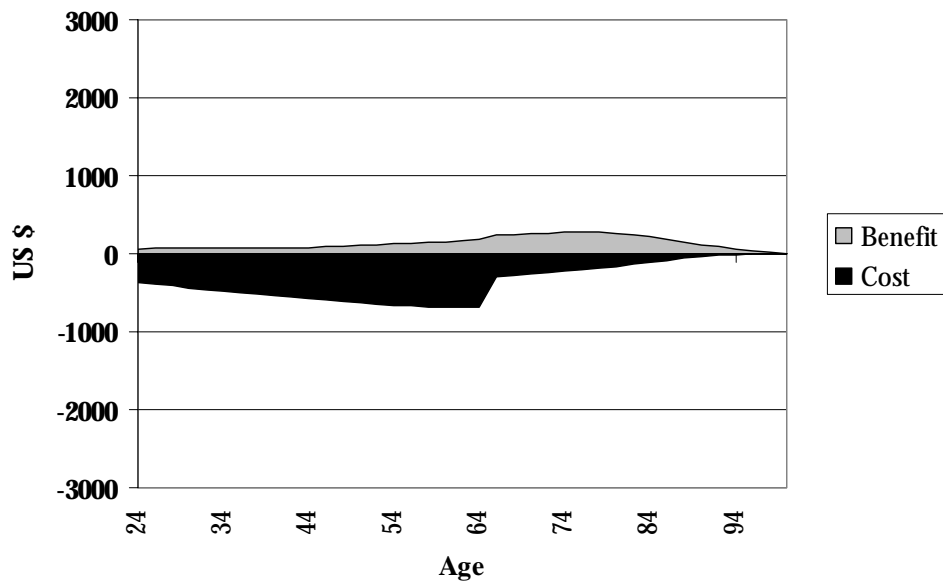


Figure 5. Costs and Benefits, Male American.

Results are presented in two different forms: firstly, a calculation of the net present value of the public LTC system, and secondly, the ratio between expected benefit and contributions. The net present values are given in *Table 16*.

Table 16. Expected Net Benefits from Public LTC Systems. Thousands of US Dollars.

	Discount Rate	Male			Female		
		HighIncome	AverageIncome	LowIncome	HighIncome	AverageIncome	LowIncome
Germany	0	-19.6	-17.4	-2.3	-16.1	15.9	39.5
Japan	0	-39.7	-14.3	-0.8	4.5	20.5	29.9
Sweden	0	-61.4	-19.6	1.0	3.6	28.2	48.1
USA	0	-38.8	-17.6	2.8	-9.4	20.8	42.2
Germany	5%	-8,0	-10,2	-5,6	-5,8	-1,9	2,5
Japan	5%	-18,1	-10,1	-6,3	-7,8	-3,5	-1,0
Sweden	5%	-26,9	-13,3	-7,1	-8,0	-1,0	3,7
USA	5%	-14,8	-7,8	-3,3	-5,3	0,5	4,5

Table 16 offers some valuable insights. Firstly, it is clear that all LTC systems are progressive in the sense that the expected net value always decreases with income. Secondly, all systems favour women – in every country and every ‘income class’, the expected outcome of women is better. This is partly due to the fact that women earn less, and partly due to the fact that they live longer.

The level of progressivity varies among the countries studied. The most progressive country is Sweden, where expected return differs by as much as \$ 109,500 between the highest and the lowest group. Germany turns out to have the least progressive system, with a span of merely \$ 59,000.

According to the net return value, the Swedish system is the most favourable to women, with a net expected value of \$ 26,600 on average. The German system is the most favourable to men, with an average of –13,000. Furthermore, the Swedish system is the most favourable to low-income earners (\$ 24,500 on average) whereas the Japanese system is the best for high-income earners (-17,600).

Another way of studying the distributive impact of LTC systems is to look at the ratio between expected benefits and costs. This is done in Table 17, with two different discount rates.

Table 17. Cost-Benefit Ratios of LTC Systems

	Discount Rate	Male			Female		
		HighIncome	AverageIncome	LowIncome	HighIncome	AverageIncome	LowIncome
Germany	0	0.02	0.61	0.92	0.20	1.55	3.28
Japan	0	0.41	0.66	0.97	1.10	1.70	2.50
Sweden	0	0.40	0.68	1.02	1.06	1.72	3.05
USA	0	0.18	0.38	1.15	0.67	2.20	5.03
Germany	5	0.04	0.32	0.46	0.31	0.76	1.48
Japan	5	0.11	0.18	0.26	0.32	0.51	0.79
Sweden	5	0.21	0.35	0.49	0.56	0.91	1.53
USA	5	0.10	0.21	0.52	0.39	1.10	2.35

The ratios in *Table 17* draw a partly different picture than the net values in. Now, Germany turns out to have the most progressive system, whereas Japan and Sweden exhibit considerably lower degrees of progressivity. This is due to the fact that the systems in these countries are comprehensive, whereas in Germany and the USA, the family still carries the main responsibility. Furthermore, the most woman-friendly system turns out to be the USA that offers a relative return between four and five times higher for women than for men. At the other extreme, the differences between the sexes are the smallest in Japan; a Japanese woman may on average only expect a relative return twice as high as a Japanese man.

To see how the systems discriminate between young and old, two net present values are calculated: one at the age of 24 and one at the age of 60. A graphical illustration of the average NPV:s with a 5 per cent discount rate is given in *Figure 6*. As indicated by the figure, Sweden burdens the young population the most with LTC costs, whereas the USA and Germany has a somewhat more equal distribution of costs and benefits over the life cycle.

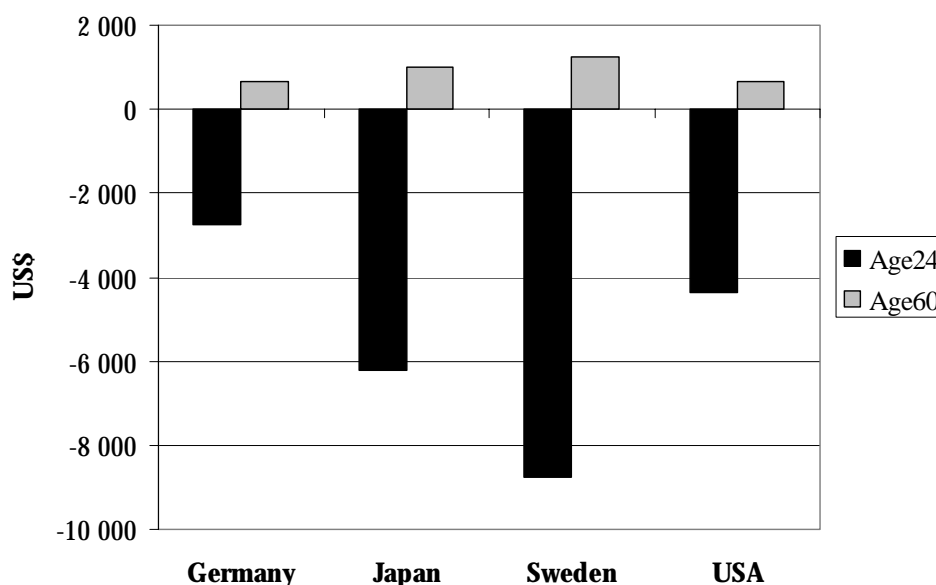


Figure 6. Net Present Value of Long-Term Care at 24 and 60.

7.4 Internal Rate of Return in LTC Systems

Since a public LTC system of the PAYG type involves life cycle transfers, it is possible to calculate the internal rate of return offered by the system in different demographic settings. In this section, we follow Keyfitz' [1985] approach for a national pension system.

Hence, we assume the LTC system to be a PAYG system of the defined-benefits type, i.e. people suffering from a certain degree of disability (in our case: 'severe disability' according to the terminology above) are entitled to a certain amount of money (that could just as well be offered in kind). The transfers to the disabled are financed by lump-sum taxes from the working population (aged 20-64).

There are some important differences to the case of pension systems: firstly, disability might appear before the age of retirement, which entitles the person in question to benefits. However, we assume that even disabled persons of working age make contributions to the LTC system (which is approximately correct if disability pensions are taxed). Secondly, not all retired are entitled to benefits, but only those that satisfy eligibility criteria. Thirdly, the prevalence of disability might change over time. We may formulate the necessary equations as follows.

Firstly, we define the premium paid in each year by everyone of working age as

$$Prem(t) = \int_{20}^{\omega} p(x,t) \cdot \pi(x) dx / \int_{20}^{64} p(x,t) dx$$

where $p(x,t)dx$ is the number of persons in the population between age x and $x + dx$ at time t , ω is the highest age to which anyone lives and $\pi(x)$ is the age-specific prevalence of severe disability. The equation to be solved for r , the rate of interest, involves the expected payment of $Prem(t)$ and the expected benefits in case of disability:

$$\int_{20}^{\omega} e^{-rx} \pi(x) l(x) dx = \int_{20}^{64} e^{-rx} l(x) Prem(f + x - 20) dx$$

where f is the calendar year where the cohort is 20 years old and $l(x)$ is the probability of an individual to be alive at age x .

Using Swedish population data, the IIASA population projection and the OPCS disability data presented above, the IRR from a public LTC system was calculated for the cohorts born between 1926-30 and 1986-90. Since the later cohorts are assumed to live beyond the end of the IIASA projection at 2050, age-specific mortality rates were assumed to be constant after this date. The resulting rates of return are presented in *Table 18*.

Table 18. Internal Rate of Return of Public LTC System

Cohort	IRR
1926-30	1.65%
1931-35	1.57%
1936-40	1.46%
1941-45	1.34%
1946-50	1.34%
1951-55	1.27%
1956-60	1.16%
1961-65	1.00%
1966-70	0.82%
1971-75	0.64%
1976-80	0.45%
1981-85	0.27%
1986-90	0.10%

It is interesting to note that all covered cohorts enjoy a positive rate of return, albeit considerably lower than real interest rates. Furthermore, the rate of return is monotonically declining with each cohort. If this trend continues, which seems reasonable according to demographic trends, the internal rate of return would be negative for the cohorts born in the 90's and onwards.

This result might be surprising at first glance. Since the baby-boom generation was born in the 40's in Sweden, one might expect that their children – people born in the 60's and 70's – would face a considerable burden financing LTC for their parents and that they would experience negative rates of return as a consequence. However, due to the age profile of LTC consumption, the baby boomers consume the bulk of their LTC when their children have already retired. Thus, the bill is passed on to subsequent cohorts.

One issue that has gained a lot of attention lately is whether and to what extent improvements in the health status mitigate the effects on costs of population ageing. To see how this effect might alter our calculations, we checked what happens if the prevalence of disability at each specific age is decreasing over time. Rather arbitrarily, we assume that the improvement in health has the effect that each successive cohort is 'younger' in terms of disability than the one before. This is the way disability rates would behave if they were more related to proximity to death than to age. Thus, we make the ad hoc assumption that each cohort over the complete time span studied is exactly one year younger (in terms of disability) than its closest predecessor and that the original disability data apply in the year 1985. The results are given in *Table 19*.

Table 19. Internal Rate of Return with Improving Health

Cohort	IRR
1926-30	0.57%
1931-35	0.47%
1936-40	0.36%
1941-45	0.23%
1946-50	0.23%
1951-55	0.20%
1956-60	0.09%
1961-65	-0.07%
1966-70	-0.25%
1971-75	-0.43%
1976-80	-0.61%
1981-85	-0.79%
1986-90	-0.96%

There are two important differences between *Table 19* and *Table 18*. Firstly, the rates of return are generally lower. This is due to the fact that the working population is financing LTC for older generations that are less healthy than they will be themselves at old age. Secondly, and due to the same phenomenon, the rate of return turns negative already with the cohort born between 1961 and 1965.

To sum up, we conclude that in the case of no changes in health status, a public PAYG system offers reasonable rates of return to most living cohorts in Sweden. However, as soon as the possibility of the of an improvement in health is taken into account, the picture changes, and the public PAYG system in fact turns out to redistribute from younger to older cohorts, and to offer negative rates of return to younger cohorts. The driving force behind this effect is the fact that – if disability is being continuously delayed – each cohort has to wait longer for the benefits to materialise, or, in other words, has to finance LTC services for a generation that is more unhealthy than the own one. One policy implication of this could be to switch to a system of partial or full funding of the LTC system.

7.5 A Market for Private Insurance?

Another use for the framework employed here could be to analyse the choice whether to buy private insurance or not from the point of view of the individual. This choice apparently would look different in the institutional settings presented here. However, it is quite clear that purchase of private insurance would be irrational under almost any circumstances in some countries. For instance, the limited importance of out-of pocket payments in Sweden probably makes a private insurance superfluous. The rapid disappearance of the private LTC insurance policies that were introduced in the nineties might be taken as an indication of this (Pacolet et al [2000]).

Thus, we confine the following analysis to two different institutional settings: a) a completely private system, b) a means-tested system, resembling the American one. The question to be answered is whether it is rational to buy private LTC insurance and, if so, at what age.

7.5.1 Method

The model applied here is similar to the one used in the preceding section. We analyse the rationale for purchasing private LTC insurance by calculating net present values for different ages. Again, it is assumed that there are two disability states (intermediate, severe) corresponding to needing domiciliary or nursing home care, respectively.

For premiums, we used the actual premiums charged by the American provider TIAA-CREF, a non-profit organisation. Since insurance is only offered between the ages 18 and 84, the premium rates have been extrapolated for older ages.

The individual has the choice to buy an insurance policy with the following features:

- a \$ 100 maximum daily benefit in nursing home as well as domiciliary care
- maximum 3 years benefit period
- a 30 days waiting period

Since we assume that the normal disability spell lasts for two years, the maximum benefit paid for nursing home will be \$ 70,000. If only home care is needed – corresponding to the intermediate disability state – benefits will amount to \$ 12,000.

For the case where there are means-tested public benefits, we calculate a probability that the individual falls below twice the poverty threshold. This amount is

roughly \$ 15,000, and the age-specific probabilities are calculated from American earnings data (U. S. Census Bureau [2000]), which gives us the following expression:

$$P_{AGE} = \min\{1, 0.000646AGE^2 - 0.06051AGE + 1.6405\}$$

It is assumed that the state pays all LTC costs once the consumer falls below the threshold, thus making private insurance redundant.

7.5.2 Results

It turns out that the purchase of LTC insurance is very advantageous for most consumers. In a free market context, where the state is not involved in LTC financing at all, net present values of as much as \$20,000 are noted for some ages. This figure is considerably less in settings where there is a positive probability that the individual will get his LTC need covered by the state; if benefits are paid to all who earn less than 15,000, the NPV is reduced to less than half. However, this is still a quite high number.

The NPV at different ages is depicted in *Figure 7*. It increases monotonically up to the age of 68, where it peaks at a value of \$ 18,800. This is remarkably close to the average age at which people buy LTC insurance. The break-even point, where expected future benefits equal future costs, is at the age of 93.

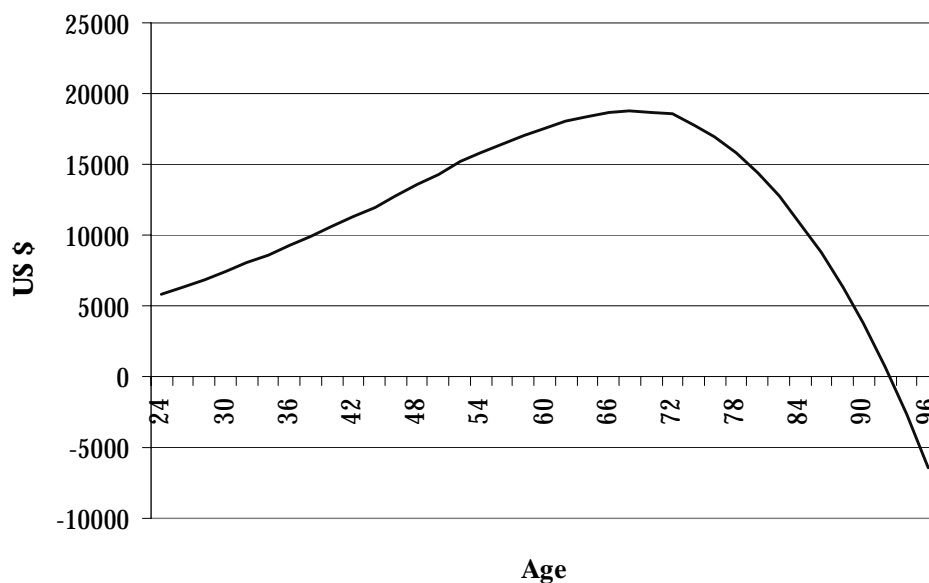


Figure 7. NPV of Private Insurance, No State Intervention.

In *Figure 8*, the NPV of private insurance in a system with means-tested public benefits is depicted. Clearly, the existence of a public programme reduces expected benefits considerably; now the NPV peaks at \$ 6,800. Furthermore, the existence of the public system reduces the optimal age for purchasing LTC insurance: now the peak is at the age of 52. The public system also moves the break-even point: now it occurs already at the age of 69. The reason is that the probability of income to fall below the limit for public intervention approaches one around the age of 80.



Figure 8. NPV of Private Insurance, Means-Tested Public Benefit.

The results presented in this section are remarkable. In a free market setting, with actuarial premiums, one would expect the NPV to be close to zero at all ages. The marked deviation from this result that we have observed here requires an explanation. One possible reason could be that the disability data we use are more than ten years old and from a different country. This argument could have some relevance, but can probably not account for all of, or even most of, the fluctuations of the NPV. Another possible explanation is that the disability data used here covers the whole population, including those who are disabled already at a young age. Since these people would most certainly be rejected if applying for LTC insurance, it makes our calculation of expected benefits biased.

Another possibility is that there is self-selection among the consumers. It might be the case that time preferences are correlated to risks. Hence, it is likely that people that have a low time discount factor, and thus demand LTC insurance at a quite early age, also care more about health and thus represent better risks. This is a hypothesis that has not yet been tested, but it certainly does deserve some further attention.

The most important finding in this section is that introduction of a means-tested public benefit reduces the optimal age for purchasing LTC insurance. Myopia on the part of the consumers is often mentioned as one rationale for public provision of pensions and LTC. Our findings suggest that, in this particular case, the state intervention would make things worse, since myopic consumers would be even less willing to purchase LTC insurance.

7.6 Some Forecasts

One reason for the steadily increasing interest in long-term care systems is of course the demographic changes that are expected to occur in most developed countries during the next couple of decades. Since need for long-term care is highly

age-related, the ageing of populations will certainly lead to increased demand. However, the relationship between demand for LTC services and ageing is not as clear-cut as it may seem. Demand for formal long-term care will, *inter alia*, also depend on the health status of elderly, family structures, and relative prices of input factors. One attempt to take such factors into consideration is provided by OECD [1998].

One rough estimate of the needs for LTC can be derived from mortality data. If, as recent research suggests, the bulk of LTC costs occur at the end of life, the number of deaths, multiplied by the share of deaths occurring in nursing homes, will produce a forecast of the needs for institutional LTC. The number of deaths for the four countries studied here are pictured in Figure 9. The figure implies that all the countries will experience a continuation of the trend of deaths to increase, but with different timing and steepness.

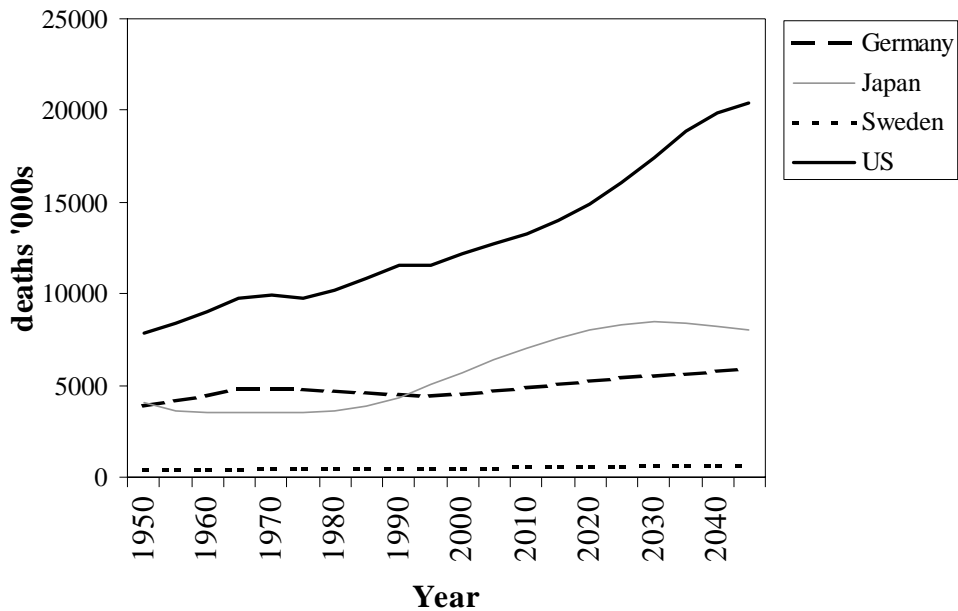


Figure 9. Number of Deaths in Studied Countries, 1950-2050.

If the death rates in *Figure 9* are multiplied with country-specific figures of the share of deaths occurring in nursing homes – ranging between 5 and 12 per cent – the data in *Figure 10* are obtained. They imply that the USA will experience a much more rapid growth in nursing home places than the other countries. On the other hand, the American labour force is not projected to shrink as much as elsewhere.

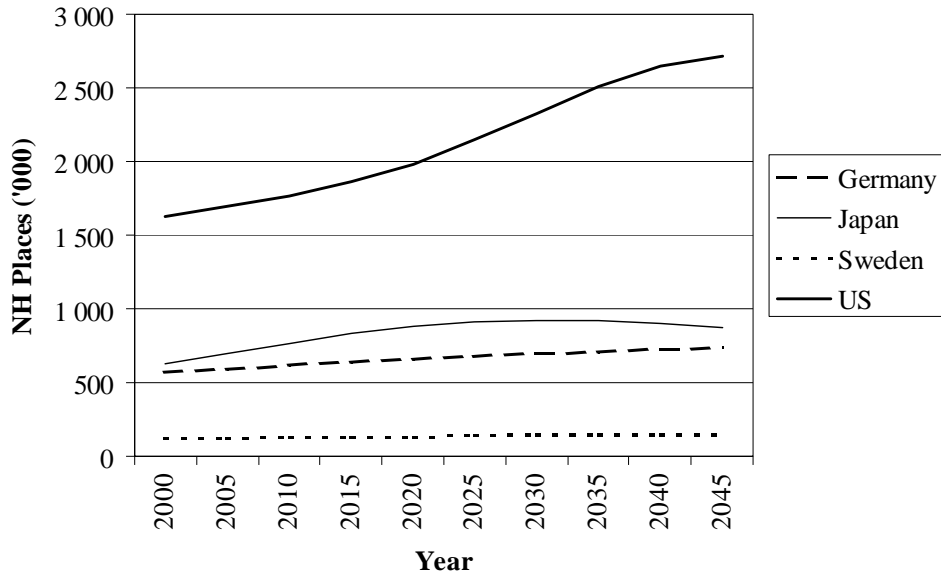


Figure 10. Implied Nursing Home Places, 2000-2045.

Relative changes to the year 2000 are given in Figure 11. It is clear that the timing of demographic changes is different in different countries. In Japan, the annual growth rate in deaths equals 1.7 per cent during the first two decades, whereas it is slightly negative between 2020 and 2025. The United States, on the other hand, will experience an increasing rate; it equals 1 per cent in the first 20 years and 1.3 per cent thereafter. Sweden and Germany are expected to experience a somewhat smoother increase in needs.

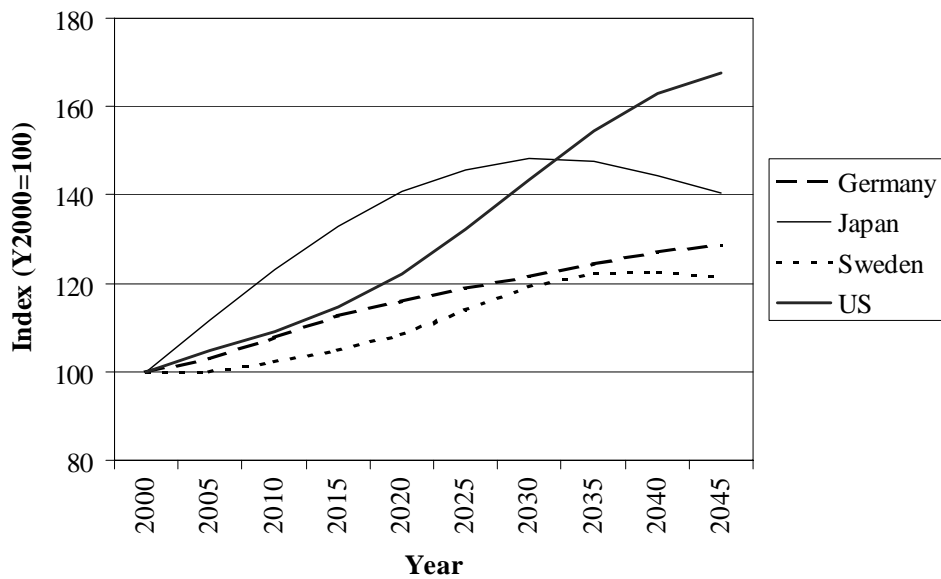


Figure 11. Implied Nursing Home Places. Index 2000=100.

8. Conclusions

One common observation when national LTC systems are observed is that they evolve in accordance with social security traditions in each specific country (cf. Scheil-Adlung [1995]). The same goes for this study: we have found that Germany relies on a social insurance administered by semi-public care funds, whereas Sweden offers universal, tax-financed coverage to all irrespective of financial status, and the USA has a system where the individual has the primary responsibility for dealing with LTC risk. These findings fit quite well into the classical types of welfare states defined by Esping-Andersen [1990]: Germany being a ‘conservative’, Sweden a ‘social democrat’ and the USA a ‘liberal’ welfare state. On the other hand, the Japanese system seems to be harder to define, since it combines elements of (at least) the ‘conservative’ and the ‘social democratic’ type.

Despite these differences, there are some general trends that have been discernible in the four countries studied here over the nineties. Thus, total costs of LTC and total public expenditure on LTC have increased in all countries. On the other hand, the share of public spending in total LTC costs has decreased in Sweden, while it has increased in the three other countries. Another area where Sweden represents a special case is in coverage of services in general and home services in particular. While other countries have expanded services to more people, the Swedish strategy has been to concentrate on the most severe cases. However, given the high level of LTC coverage in Sweden already at the beginning of the last decade, these differences in trends simply imply that countries are converging toward a common degree of coverage.

Regarding the distributional effects of the LTC systems, the simple model utilised here has generated some interesting findings. We have found that all systems are progressive in the sense that the balance between benefits and costs is better for low-income earners than for high-income earners. Furthermore, in all countries studied women are favoured by the system. This is due to the fact that women earn less money, have a longer life span and in general face higher risk of disability.

Among the countries studied, the Swedish system is the most favourable to women and to low-income earners. At the other extreme, Japan has the least progressive system and Germany has the system that favours men the most. Furthermore, all countries have systems that are more favourable to the retired than to the working population. This is natural since the risk of being disabled increases exponentially with age. However, Sweden seems to be extreme even in this case, presenting a considerably worse balance to working age people than other countries do.

One drawback with the model presented here is that it does not take people with no or very low income into consideration. However, since all countries offer LTC services under quite similar conditions to this group, this omission could not influence the observations too much. A more important objection from an economic point of view is that people’s behaviour is assumed to be insensitive to the institutional setting. This is most certainly not correct. On the other hand, since the purpose was to isolate the distributional effects of the LTC system itself, even this assumption might be justified.

Another important observation is that the internal rate of return of the Swedish LTC system, which is financed on a PAYG basis, is positive for all cohorts born

before 1990. However, if the health status of the population is continuously improving, so that disability occurs at ever higher ages, the internal rate of return is considerably lower and negative for all cohorts born after 1960. The policy implication of this could be to introduce funding in the LTC system.

Another finding of interest is that private LTC insurances in the USA do not work in accordance with what we would expect given the disability data used here. This finding reflects the fact that people purchasing private LTC insurance are not representative of the population in terms of health status. The fact that the net present value of purchasing private LTC insurance changes considerably over time indicates that there is some self-selection among customers taking place. Furthermore, we have found that the existence of a means-tested public benefit may shift the optimal age for purchasing private LTC insurance backwards.

The issue of distributional effects of LTC systems in different countries certainly deserves to be studied more thoroughly. As soon as comparable data are available, it would be possible to relax some of the very simplifying assumptions used here, and to take differences regarding assessment procedures and availability of services into account.

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Appendix 1

9.1 Germany

9.1.1 Contributions

Income Below DEM 78,000 (USD 44,000): pays insurance premium equal to 1.7 per cent of income + general income tax 0.5 per cent (cover social assistance costs and investment costs of the *Länder*).

Above 78,000: pays only 0.5 per cent income tax.

9.1.2 Benefits

Equal for all with incomes below 78,000: nursing home compensation would be DEM 33,600 p. a. (US\$ 19,000). We assume that the rule limiting benefits in nursing homes to 30,000 *on average* does not apply in this case. For home care, compensation is 9,000 p.a. (US\$ 5,000).

People in nursing home below poverty threshold (2,120 DEM p.a.) get the difference covered by social assistance. This is in accordance with the average *Taschengeld* (personal needs allowance) granted to nursing home residents.

9.2 Japan

9.2.1 Contributions

Insurance Premium: 0.6 per cent of income between age 40 and 64. For retired: depending on the income, the insured pays a premium amounting to between 0.5 and 1.5 times the standard premium (US\$ 280 per annum).

General Taxes: Tax Rate 1.5 per cent (partly LTC insurance, partly financing hospitalised elderly).

9.2.2 Benefits

90 per cent of total cost.

9.3 Sweden

Figures and Exchange Rates for 1998 used.

9.3.1 Contributions

General income taxes: 3.0 per cent.

9.3.2 Out-of-pocket Payments

Home Care: 635 SEK (US\$ 80) per month, flat rate. This corresponds to the average charge (National Board of Health and Welfare [2000]).

Nursing Home Care:

If annual income less than SEK 144,000 (US\$ 18,200): $SEK\ 20,000\ (US\$ 2,500) + 0.1 * (Income - 48,000\ (US\$ 6,000))$

If income more than SEK 144,000: $27,600 + 0.4 * (Income - 48,000)$

Maximum Charge: SEK 50,000 (US\$ 6,328)

9.4 United States

9.4.1 Contributions:

The Medicare tax is 2.9 per cent, divided between employer and employee. Out of the total Medicare budget of \$ 200 bn., approximately 30 bn. Are LTC costs. Consequently, the 'LTC part' of the Medicare tax is 0.435 % (HCFA [2000]). Medicare taxes are paid while working.

Furthermore, Medicaid LTC benefits are tax financed. The rate is assumed to be 1.0 per cent.

9.4.2 Benefits:

Home Care: Medicaid/Medicare pay 63 per cent of costs for all.

Nursing Home Care: Medicare covers 20 first days, plus cost above a deductible of \$ 95.50 the next 80 days.

Medicaid reimbursement: $NH\ Cost + PersonalNeedsAllowance - Income - MedicareBenefit$

Personal Needs Allowance is \$ 1440.