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Tommy Bengtsson
Editor

Population Ageing – A Threat to the Welfare State?

The Case of Sweden

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Editor
Prof. Dr. Tommy Bengtsson
Lund University
School of Economics and Management
Centre for Economic Demography
Scheelevägen 15B
22363 Lund
Sweden
tommy.bengtsson@ekh.lu.se

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Contributors

Tommy Bengtsson is Professor of Economic History and Demography at Lund University. He is also Director of the Centre for Economic Demography at the same university since 2006. Bengtsson has in recent years been co-author and co-editor of several books released at internationally distinguished publishers (MIT Press, OUP, and Springer), and one of which received a prize from *the American Sociological Association* as *Outstanding Book on Asia 2005*. He has also had several articles published in international and well-known journals applying peer-review selection, and is co-editor for a special publication series at MIT Press. His international publications include *Population, Economy and Welfare in Sweden* (Springer-Verlag 1994), *Population and Economy* (Oxford University Press 2000, 2nd ed. 2003), *Life Under Pressure* (MIT Press 2004), *Living Standards in the Past* (Oxford University Press 2005), and *Kinship and Demographic Behaviour in the Past* (Springer 2008).

Andreas Bergh received a Ph.D. in Economics 2003 from Lund University in Sweden and was visiting scholar at Harvard in 2004 at the Centre for Basic Research in the Social Sciences. His research concerns the welfare state as well as institutional economics, and recent publications include European Economic Review, European Sociological Review, Political Studies, and Social Science Quarterly. He has also published a book titled Institutional Competition (Edward Elgar) and is currently leading a research project on reform process in mature welfare states. He is currently affiliated with both the Ratio institute in Stockholm and Lund University.

Per Gunnar Edebalk is Ph.D. in Economic History and Professor in Social Work at Lund University. During the years, he has been heading several research projects, the latest ones on Contractual Benefits in the Swedish Labour Market, on Quality competition and Consumer Choice in Home-help Services, and on Elderly Care and the Local Authorities. His published works, 150 in total, include *Arbetslöshetsförsäkringsdebatten. En studie i svensk socialpolitik 1892–1934* (Lund 1975),

Välfärdsstaten träder fram – svensk socialförsäkring 1884–1955 (Lund 1996), *Staff and Staff Statistics in Services for the Elderly in the Nordic Countries* in Social Protection in the Nordic Countries 2002 (Copenhagen 2004), and *Employers and Sickness Insurance. A contribution to the development of Social policy in Sweden 1955–2005* accepted 2008 for publication in Scandinavian Journal of History. Edebalk is member of two Scientific Advisory Boards: at Doshisha University, Kyoto, and at the Centre for Ageing and Supportive Environment at Lund University. He is also member of the Boards of the Centre for Economic Demography and of the Work Environment College, Lund University.

Åsa Hansson's main research centers on how taxes influence both individuals' and firms' decisions and incentives. In addition, she has written several published articles and book chapters on how globalization affects individual countries' ability to conduct independent tax and fiscal spending policies. She has worked extensively with large datasets enabling her to study, among other things, how sensitive taxpayers' and the propensity for individuals to become self-employed are to tax rate changes. She has recently published in International Tax and Public Finance, Journal of Entrepreneurship, and European Journal of Political Economy. She is currently a member of the Danish Tax Commission. Åsa divides her time between Lund University and Copenhagen University.

Agneta Kruse is a Senior Lecturer at the Department of Economics, Lund University. Her research focuses on economics of social insurance and pension systems. She served as an expert to the parliamentary Commission on Pensions preceding the Swedish pension reform. She analyzes, among other things, pay-as-you-go pension systems and their sustainability encountering demographic and economic changes as well as the political economy of pension reforms. She has published articles in journals and contributed chapters to a number of books. Lately, she has also been working on globalization and social insurance.

Björn Lindgren is Professor of Health Economics at Lund University, Sweden, and Research Associate at the National Bureau of Economic Research, United States. He is series co-editor of *Advances in Health Economics and Health Services Research* and former director of IHE, the Swedish Institute for Health Economics, Lund, Sweden, and LUCHE, Lund University Centre for Health Economics. His research interests include the economic analysis of individual health behavior and its dependence on family structure and societal institutions. He has published extensively in a variety of economic and medical journals, including the *British Medical Journal*, *Health Economics*, the *Journal of Health Economics*, the *Journal of Political Economy,* the *Journal of Risk and Uncertainty*, *Medical Care*, the *Scandinavian Journal of Public Health*, and *Social Science and Medicine*. Recent publications include *Simulating An Ageing Population. A Microsimulation Approach Applied to Sweden*, co-edited with Anders Klevmarken and published by the Emerald Publishing Group, Bingley, in 2008.

Carl Hampus Lyttkens is Professor of Economics at Lund University (Sweden) since 2000. He has been engaged in health economic research for more than 20 years. His current research interests include incentives in public healthcare, individual health-related behavior, income inequalities and health, and finally new institutional economics applied to the ancient world. During 1994–2000, Lyttkens was a senior research fellow of The Swedish Medical Research Council and a member of the Council's Committee for the Evaluation of Medical Technologies during 1994–2002. Lyttkens was a member of the Expert Committee for Economics Analysis of the National Swedish Public Health Committee during 1997–2000. Lyttkens has been responsible for several international conferences in health economics. He was a member of the Standing Scientific Committee of the International Health Economics Association (iHEA) 2004–2008. Since 1997, he is Chairman of the Board of the Library of the School of Economics and Management, Lund University.

Kirk Scott is Associate Professor of Economic History at Lund University, and is currently active both at this department and the Centre for Economic Demography. He is also president of the Swedish Demographic Association and the Nordic Demographic Association. His research lies in the intersection between immigrant integration and demography – namely the effects of immigrant labor market status on various demographic outcomes such as fertility, divorce, and health. Recent examples of his work can be found in "Childbearing Dynamics of Couples in a Universalistic Welfare State: The role of labor-market status, country of origin, and gender", *Demographic Research* 17(30), 2007 (with Gunnar Andersson), "The Times They Are A-Changin". "Organizational Change and Immigrant Employment Opportunities in Scandinavia", *International Migration Review* 40(2), 2006 (with Michael Rosholm), and "Swedish Case Study on Demographics and Higher Education" in Vlăsceanu, L. and Grünberg, L. (Eds.). (2008). *Demographics and Higher Education in Europe – Institutional Perspectives* (with Maria Stanfors).

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Chapter 1
Introduction

Tommy Bengtsson

Population ageing, the shift in age distribution towards older ages, is of immense global concern. It is taking place to a varying degree all over the world, more in Europe and some Asian countries, less on the African continent. The worldwide share of people aged 65 years and above is predicted to increase from 7.5% in 2005 to 16.1% in 2050 (UN 2007, p.11). The corresponding figures for developed countries are 15.5 and 26.2% and for developing countries 5.5 and 14.6%. While population ageing has been going on for some time in the developed world, and will continue to do so, most of the change is yet to come for the developing world. The change in developing countries, however, is going to be much faster than it has been in the developed world. For example, while it took more than 100 years in France and more than 80 years in Sweden for the population group aged 65 and above to increase from 7 to 14% of the population, the same change in Japan took place over a 25-year period (UN 2007, p. 13). The scenario for the future is very similar for most developing countries, including highly populated countries like China, India and Brazil. While the start and the speed differ, the shift in age structure towards older ages is a worldwide phenomenon, stressing the significance of the concept *global ageing*.

What, then, are the consequences of global ageing? What can the developed world learn from its previous experience, and what can the developing world gain from the changes ahead? Assuming that the age of retirement stays stable, the number of elderly per worker will multiply. Hence, the transfers from workers to the elderly will increase regardless of whether funded by the elderly themselves through savings, through their families or through the public sector. In order to understand and learn from these anticipated changes and from previous experience of the consequences of population ageing, we must, however, also understand its causes.

T. Bengtsson
Department of Economic History and Centre for Economic Demography, Lund University, Scheelevägen 15B, 223 63 Lund, Sweden
e-mail: tommy.bengtsson@ekh.lu.se

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The first stage of population ageing is primarily driven by fertility decline (Chap. 2). This is the reason why it began earlier in Western Europe than in developing countries and this is also why population ageing is going to be much faster in developing countries than in Western Europe as the decline in fertility will be more rapid there. The fact that population ageing, in its first stage, primarily is driven by a decline in fertility may seen counterintuitive given the huge increase in life expectancy at birth shown in the developed world over the past 150 years, from ~40 to 80 years. However, one should bear in mind that most of this decline has lead to a rejuvenation of the population since the years gained predominantly have been in ages below 65 years. It was not until life expectancy at birth reached above 70 years of age that the fertility decline started to contribute to population ageing in the developed world, which is quite recently (Lee 1994). It is therefore very important to distinguish between population ageing and individual ageing. Still, it is expected that population ageing in the developed world in the future to a greater extent will be driven by declining mortality in older ages. Thus, population ageing in Europe and elsewhere in the developed world has shifted from being determined by a decline in fertility to being driven by a mortality decline among the elderly, which has major implications for its consequences.

Population ageing in the developed part of the world was until recently more than compensated for by the decline in the youth population. As a result, the number of young and old in relation to the size of the working-age population decreased. Families benefited from this situation as it meant that they had fewer to support and society benefited as the size of the working-age population increased. This phenomenon is known as a 'demographic gift'. While the developed world already has granted this 'gift', the developing world is in the midst of unwrapping it. It is argued that in Asia between a third and a fourth of the economic growth in recent years is due to this phenomenon (Mason 2007). While future population ageing in the developing world to a certain extent will follow past ageing trends in the developed world, ageing in the developed world will in the future take on a new form. Consequently, the developed world, for example Western Europe, will have less to learn from its own experience than the developing part of the world will or can. Furthermore, the speed of ageing in the developing countries differs, and the fact that population ageing has gone seemingly smoothly in the past is no guarantee that it will do so in the future.

Consumption and production at various ages constitute the link between population age structure and the economy. Consumption and, more so, production vary with age. Thus, the change in the consumer–worker ratio is only a first approximation of what will happen in the future. Recent figures for Europe, as well as for the US, show that consumption increases sharply with age (Mason 2007). In addition, per capita consumption among the elderly has also increased over the past decades due to rising social care and healthcare costs. Hence, future population ageing in Europe and other parts of the developed world will be very costly and it will not be offset by declining costs for the youth population. In fact, even if age-specific consumption among the elderly as well as all other age-groups is kept constant, the net consumption deficit, that is total consumption minus total

labour earnings in a given year, will increase with 350% by 2050, taking Sweden as an example (Chap. 2).

Sweden is, for many reasons, of particular interest when it comes to population ageing and the consequences thereof. Until recently, Sweden had the highest proportion of elderly in the world. Average life expectancy in Sweden is also very high. Nevertheless, even if the fertility rate is somewhat higher than in most other developed countries, it is still too low to keep the labour force from shrinking, as is also the case elsewhere in the developed world. Furthermore, while Sweden has amongst the highest immigration levels in the developed world, immigration still cannot stop population ageing in this country (Chap. 2), or in other countries (UN 2007, pp. 18–20). Thus, while population ageing in Sweden is pronounced due to its early development, it is not extreme. The underlying factors are the same as in other parts of the developed world.

Sweden is also of particular interest since a large part of the transfers across generations takes place within the public sector. At first, the development of the welfare state was no more rapid in Sweden than in other West European countries. In 1960, public expenditure constituted 31% of GDP, which was somewhat lower than in France, Germany, Britain and Austria. Social entitlements in Sweden have since expanded in one area after the other: childcare, child allowances, education, education allowances, unemployment insurance, social welfare allowances, industrial injuries compensation, disability compensation, early retirement pensions, partial retirement pensions, supplementary pensions, housing allowances, and so forth, covering all stages of life. In other parts of the world a considerable amount of these transfers and services take place within the family, like in Southern Europe, or are supplied through the market, like in the US. As a consequence of the expansion of social and medical services, Sweden took the public expenditure lead in the 1970s and has kept it since even though many other countries are following suit, most notably those in Northwestern Europe. Today social transfers account for 21% of GDP alone (SOU 2004) and while transfer payments are not a cost in themselves, they need funding, as do other parts of the welfare state. Due to its far-reaching coverage in smoothing consumption over a person's lifespan and providing insurance against various risks, Sweden and the other Nordic countries stand out in comparison with most other countries. The term 'the Swedish model' (alternatively 'Scandinavian model' or 'Nordic model') is often used to label its features.

There is no demographic solution to funding the welfare state in general, or to funding transfers to the elderly, at least not within a 25–30 year period which is the time it takes for a birth bulge to enter the labour force. Migration will make a very modest contribution at best (Chap. 2). Since the welfare system in Sweden is primarily funded through income taxes, it is dependent on the size of wage sums and tax levels. In order to maintain present levels of benefits either the tax burden on those working has to increase, or the tax base has to expand. Sweden, however, already has one of the highest income tax levels in the world leaving little or no room for expanding revenues this way (Chap. 3). Could tax revenues be expanded by increasing other taxes, such as value added tax and income tax? Again, in this

context, Sweden is already at a high level and, if anything, one would expect these taxes to decline (Chap. 3). It is true that the hours worked could be increased by entering the workforce at an earlier age, retiring later, working longer hours per week, more weeks each year, and so on. Even though labour force participation already is high in Sweden in comparison with other European countries, there still is room for improvement. It is, however, debatable whether this will fully solve the problem (Chap. 3). The question is then whether present levels of social and medical care can be maintained by increasing efficiency or if we could expect cuts in the welfare systems.

Sweden is, once again, interesting since some of the Swedish welfare systems already have undergone substantial reforms recently. This is the case for the pension system which dates back to 1913 when it became the first general pension system in the world (Chap. 4). While it started as a contributions-benefit system funded by contributions from the labour force and paid back as benefits when they retired, it was then turned into a so-called pay-as-you-go system, where current benefits are paid by contributions from the current workforce. The pay-as-you-go system was put under pressure, partly because of population ageing but also due to a long period of slow economic growth. As it became financially unstable, a new system more similar to the original one was developed. Other countries, such as France, Italy, and Spain, have been in similar situations, restructuring their pension systems in various ways, though the reforms have been less radical than in Sweden. Almost 10 years have passed since the Swedish pensions reform was implemented, which is why it is appropriate to assess whether it has fulfilled its purpose and discuss whether it will be able to manage the changes in population age structure that lie ahead. The conclusion is that while the system will survive, benefits will be reduced under the pressure of increasing longevity that, however, could be counterbalanced by postponed retirement (Chap. 4).

The systems for elderly care in Sweden also underwent significant transformation in the 1990s, although less profound than in the case of the pension system (Chap. 5). Elderly care has always been a local responsibility in Sweden, albeit regulated by the state. The autonomy experienced by the local communities when organising care for the elderly has, nevertheless, changed. During certain periods, old people's homes were the obvious choice with regard to elderly care. During the 1950s, as housing standards improved and additional labour in terms of housewives became available, home-based services became the dominant form of elderly care. Around 1990, however, the local communities were given increased autonomy in organising elderly care. Since then, several competing systems have emerged and it remains an open question whether they will survive the pressure of an ageing population or whether the state will take financial responsibility for elderly care and, for example, introduce a system of elderly care insurance.

Financing healthcare for the elderly and in general is another emerging issue in Sweden. Today, health expenditure accounts for 9.1% of GDP in Sweden, slightly above the OECD average (Chap. 6). The healthcare system in Sweden can be characterized as a public health service model, with some 85% of the costs publicly financed, again somewhat over the OECD average of 73%. While

the healthcare system mainly is public it is, however, not nationally organised but instead decentralised with regard to both its organisation and its funding. In fact, in Europe only Finland has a more decentralised system. County-council income taxes are the most common way of financing healthcare in Sweden. Like elsewhere, costs for healthcare (of which inpatient care costs dominate) are considered very high and various ways of increasing the efficiency or simply cutting costs are being tested. While the standard of Swedish healthcare is as high as in other parts of the industrialised world, the waiting time for diagnosis and treatment is long. Thus, the system is under pressure even before taking population ageing into account.

What, then, are the consequences of population ageing for future spending on healthcare and what measures can be taken to ensure high quality and fast access in the future? By using a micro-simulation model, Lindgren and Lyttkens (Chap. 6) have estimated that the demand for healthcare will increase by 30% by 2040. Technological change is a non-solution, since it has only served to increase costs in the past, as is institutional change. A fundamental reform, like the pensions reform in the 1990s, seems unlikely, as does explicit priority setting. Instead, one could expect healthcare to be a highly prioritised public activity also in the future, possibly crowding out other activities, such as public subsidies for housing.

To summarise, the Swedish welfare system has undergone profound changes over the past decade, in several respects deeper and more extensively than other West European countries. This is particularly the case for the pension system, but the social care systems for the elderly have also changed a great deal. The healthcare system is presently undergoing transformation to some extent in order to promote efficiency and keep costs from exploding. Population ageing over the next few decades will put even greater pressure on the welfare state, possibly lowering the compensation degree or crowding out some of its main activities. Thus, the question is whether the Swedish welfare model will take on a different form – if this has not already taken place – or whether it will remain similar to what it is today, rendering it relevant to use the concept also in the future. To phrase it differently, and alluding to the topic of the concluding chapter of this volume (Berg, Chap. 7), are we moving towards a new Swedish model? The questions regarding the survival of the welfare system, and whether it will take on a different form under the pressure of population ageing is, however, not a genuine Swedish issue but of importance to all welfare societies.

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Chapter 2
The Ageing Population

Tommy Bengtsson and Kirk Scott

Abstract The process of population ageing that has been occurring in Sweden can be expected to continue during the coming decades, the population pyramid will become increasingly rectangular, and possibly even demonstrate a shrinking base. This will lead to increasing challenges in terms of financing pensions, elderly care and healthcare. These problems will continue for at least the next 30 years with no demographic solution available. Immigration is not likely to offset population ageing to any larger degree, and even dramatic increases in fertility rates would take 25–30 years to have any positive effect. Since increasing tax rates seems unlikely, the most viable solution lies in an expansion of the workforce and the resulting increase of the tax base. If we rely solely on increasing the retirement age to provide the increased hours worked, we would need to raise the minimum retirement age by roughly 5 years until 2050. While this might be possible, it is more likely that the solution lies not in this or any other single measure but in a combination thereof. However, expanding hours worked not only requires incentives but also job opportunities. Thus the policy should aim not only at expanding labour supply side but also labour demand.

2.1 Introduction

Sweden has been undergoing a process of population ageing over a period of more than 100 years, during which time the share of elderly has more than doubled. Given existing problems regarding the organization of elderly care, as well as healthcare in general, the question is how Sweden will cope with the large Baby Boom generation when it leaves the workforce and enters retirement. Since the

T. Bengtsson and K. Scott
Department of Economic History and Centre for Economic Demography, School of Economics and Management, Lund University, Scheelevägen 15B, 223 63 Lund, Sweden
e-mail: kirk.scott@ekh.lu.se

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cohorts entering the labour force are smaller, there are also worries concerning how the future financing of the welfare state will be secured. This chapter will primarily examine the questions of why population ageing has occurred, how it is likely to develop in the future and what the potential economic consequences will be. It will also examine possible solutions to the problems associated with an ageing society, such as the viability of immigration as a potential solution.

2.2 Fundamentals of Population Ageing

The share of the Swedish population over the age of 65 increased from 8 to 17% during the twentieth century (see Table 2.1). This impressive increase marked a pronounced change from the stability during the previous period dating back to at least 1750, with a slight increase during the late nineteenth century (Statistics Sweden 1999, p. 21). The population pyramid for Sweden in 1900 (see Fig. 2.1) still has the classic pattern, with a broad base made up of younger people successively tapering off with increasing age to a pointed top, common in all agricultural societies in the past and found in many developing countries today.

The population structure in 2000, however, shows that this traditional pyramid shape was replaced during the preceding 100 years by a more urn-shaped age structure, with a smaller base and wider top than before. The proportion of elderly is expected to continue to increase, making the form more and more rectangular.

Table 2.1 The Swedish population 1750–2000

	1750	1900	2000	2050
Age structure				
0–19 years	42%	42%	24%	22%
20–64 years	52%	50%	59%	54%
65 + years	6%	8%	17%	24%
Average age		29 years	39 years	43 years
Life expectancy at birth:				
Men	35 years	51 years	77 years	83 years
Women	38 years	54 years	82 years	86 years
Life expectancy at age 65:				
Men	10 years	12 years	17 years	21 years
Women	10 years	13 years	20 years	23 years
Average age at first marriage:				
Men	27 years	28 years	33 years	
Women	25 years	26 years	31 years	
Share of 40 year old women who are:				
Unmarried	16%		20%	
Unmarried and not cohabiting	15%		10%	
Total fertility rate	4.8	4.1	1.6	
Total marital fertility rate	5.7		ca. 1.8	

Source: BiSOS; Befolkning (Statistics Sweden)

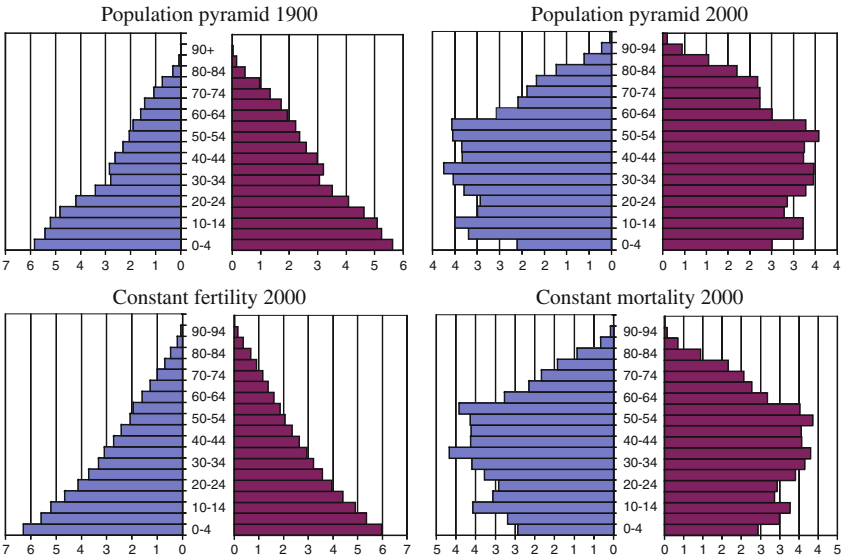

Fig. 2.1 Age structure in Sweden in 2000 compared to how it would have looked if fertility or mortality had remained constant at 1900 levels throughout the twentieth century. Percent of the population in each age interval, right-hand columns females, and left-hand columns males
Source: Own calculations using yearly data on births, deaths and migration in one-year age groups from BiSOS; Befolkning (Statistics Sweden)

Population ageing took place in all industrialized countries during the twentieth century, with the difference being that the process was more pronounced in Sweden. Several industrialized countries, however, have gained on, and even passed, Sweden during recent decades. Population ageing has evolved into a global phenomenon, also affecting many newly developed and developing countries. Taken together, the share of the world's population above the age of 65 is currently increasing and is projected to rise from 6.6% in 2000 to 16.4% in 2050 (Bongaarts and Bulatao 2000, p. 23).

The reason why the share of elderly has increased may appear obvious: life expectancy has increased and people are living longer. Average life expectancy in Sweden has indeed risen considerably during the past century (Table 2.1), as in other parts of the world. The world record in average female life expectancy has, on average, increased at an almost constant rate of 3 months per year from 1840 until today, while slightly slower for males (Oeppen and Vaupel 2002). This development means that children live roughly 9 years longer than their parents, and this has continued generation after generation. The records have been held by Norway, Australia, New Zeeland and a few other rather small countries including Sweden. The most recent record holder is Japan. While the improvements in life expectancy did not begin as early in recently developed countries, the development has been much more rapid. This process will almost certainly slow at some point, but there is yet no indication that we have reached that point.

While these developments have been impressive, they have had a limited impact on population ageing so far. In fact, the improvements in life expectancy initially rejuvenated the population, since the early increases in life expectancy were driven by a decline in infant and child mortality. Consequently, most of the actual years gained through these increases were below the age of 65. For Western countries, it was not until life expectancy at birth passed ~72 years that the increase in life expectancy was driven by a reduction in mortality among the elderly, thus contributing to population ageing (Lee 1994).

The primary cause of population ageing has historically been declining fertility. The overarching importance of fertility decline on age structure was highlighted by the American demographer Ansley Coale in 1957, with the help of Swedish data (Coale 1957). Coale showed that, had fertility rates remained unchanged, the age structure would largely have been the same in 1950 as in 1860, despite substantial increases in life expectancy during this period. When Coale held mortality constant at 1860 levels and allowed fertility to develop at historical rates, however, he found that the projected age structure was strikingly similar to the actual age structure in 1950. Coale's work therefore shows that the population ageing that occurred throughout the first half of the twentieth century was almost exclusively the result of fertility decline.

In order to identify the causes of the continued population ageing through the remainder of the century, we repeated Coale's calculations using data for the entire twentieth century. Figure 2.1 shows the actual age structures in 1900 and in 2000 as well as the calculated age structure for the year 2000 under two counter-factual regimes: one where fertility is held constant at the 1900 level and mortality is allowed to change at historical rates, and one where mortality is held constant at the 1900 level and fertility is allowed to change at historical rates. The results are similar to those found by Coale; population ageing in Sweden was primarily driven by the decline in fertility throughout the twentieth century.

Repeating the calculations for each year from 1900 to 2000, we estimated the effect of each component of population ageing, shown in Fig. 2.2. When mortality was held constant, the share of people over the age of 65 was 3 percentage points lower than the 17% observed in 2000. When fertility was held constant, the share of those over the age of 65 in the counter-factual was 8.4%, exactly the same percentage as in 1900. This approximate level would occur regardless of whether mortality was held at the 1900 level or was allowed to develop along historical paths. Through this exercise, we show that the share of elderly in 2000 was ~10 percentage points higher than it would have been if family sizes had not declined during the twentieth century. This implies that fertility retained its dominant position as the main determinant of age structure throughout the entire twentieth century. If fertility levels stabilize over a longer period, however, other factors, such as mortality change, will increase in importance. Over the last decades of the twentieth century, we have started to see mortality beginning to exert an influence on the age structure, indicating that this process has already begun, as shown in Fig. 2.2 (see also Preston et al. 2001).

Observations regarding how changes in mortality and fertility affect the age structure led in the 1920s to the development of 'stable population theory'

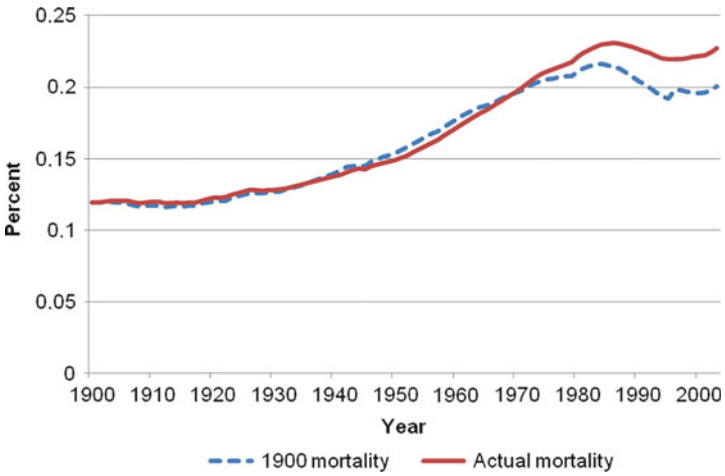

Fig. 2.2 Share of the population over the age of 60, 1900–2000. Actual development and the development as it would have been with mortality held constant at 1900 levels
Source: Own calculations using yearly data on births, deaths and migration in one-year age groups from BiSOS; Befolkning (Statistics Sweden)

(Lotka 1922; Dublin and Lotka 1925; Keyfitz 1968). This theory concerns the amount of time needed for a population to achieve equilibrium – with a stable age structure – after fertility and mortality either stabilize or continue to change at a more-or-less constant rate. This theory predicts a more stable, but less advantageous, population pyramid for Sweden in coming years, with fewer individuals of working age and more people in the older age groups. One major drawback of this theory, however, is that immigration is not accounted for – a point to which we will return below.

The fact that fertility, and not mortality, has been the driving force in population ageing may seem counter-intuitive. It is easy to confuse population ageing with individual ageing, especially in light of the dramatic increase in life expectancy experienced in industrialized countries. It is nevertheless important to make this distinction, between the fact that life expectancy increases and the fact that the share of elderly in the population increases. In the same vein, we must distinguish between the share of the population surviving until the age of 65 and the share of the population over the age of 65.

It may appear contradictory that the share of the population in 1900 that survived until the age of 65 was between 58 and 65%, depending on gender (Statistics Sweden 1999, pp. 123–124), while only 8% of the population at that time was over 65 years of age (see Table 2.1). The explanation lies in the fact that fertility rates were high, leading to future generations always being larger than those that came before. This phenomenon is known as *positive population momentum* (Preston et al. 2001). On the other hand, if a new generation is smaller than their parents' generation, we can expect the population to experience *negative population momentum* and the population can thus be expected to decline.

Yet another factor influencing population growth is the spacing between generations. Generational spacing is measured by the mother's age at the birth of her middle child. For Sweden, the generational span was roughly constant at 31 years from 1750 until the 1870s. It has since declined more-or-less continuously, a state that has had a positive effect on population growth. The shortest span of time between generations was in the 1960s, with a generational spacing of only 26 years. Since then the spacing has increased to today's level of roughly 30 years. Given a constant fertility rate, population growth can therefore vary based on generational spacing, with less spacing being more conducive to population growth.

2.3 Consequences of an Ageing Population

Initially, population ageing was not a problem for society. The factor that caused population ageing, the decline in fertility, was also its solution. First, it had positive effects on economic growth. Population growth implies capital dilution, unless additional capital is augmented, which means that per capita consumption is held back. Consequently, the larger the decline in population growth rates, the less output needs to be allocated to investment in order to keep each worker with a given amount of capital. The deceleration of population growth therefore had positive effects on the economy. Second, the reduction in fertility during the early decades of the twentieth century was so rapid that it more than compensated for the increased share of elderly. The dependency ratio – the number of people of the population either too young or too old to work divided by the number of workers – declined (Statistics Sweden 1999, p. 21). In the longer run, however, when fertility rates stabilised at a lower level and mortality went from rejuvenating to ageing the population, the share of elderly in the population not only continued to increase, but the dependency ratio increased too.

In an influential article from 1958, the American economist Paul Samuelson discussed how consumption might be maintained throughout the life cycle (Samuelson 1958).[1] His *overlapping-generations* model divides an individual's life cycle into two periods: one as a productive worker and one as an unproductive retiree. Samuelson assumes that the fruits of a worker's labour cannot be saved, but must be consumed immediately, implying that a worker is incapable of saving for his/her own retirement. This leads to a situation where all retirees are dependent upon workers to support them. Samuelson argues that the market cannot solve this problem and provides three examples of how to solve it: (1) a family system with transfers from working children to their retired parents, (2) the creation of 'fiat money'[2] as a store of value that can be saved by the workers, or (3) a social security system in which pensions are paid for by a

[1]This section is based on the excellent overview in Willis (1994).

[2]Fiat currency, or fiat money, is money backed by an authority, usually a government, for use in exchange of goods and services or to pay a debt.

tax on workers. A system of transfers from worker to retired through any of these institutions will lead to an improvement in welfare for all persons in current and future generations. Since each person has an incentive to renege on a tax-based system, it needs to be supported by a "social compact".

Samuelson (1975) later used this model to explore the impact of population growth on economic welfare. He points out that population growth has a positive influence on average economic welfare because the tax base for intergenerational transfers grows faster than pension totals, the reason being that the ratio of workers to retirees increases. This increase may therefore balance the negative effects of population growth caused by capital dilution. Thus Samuelson's work helps us to understand the transfers between generations, and has served as the basis for a generalization which is even more useful, if also less known.

Arthur and McNicoll developed Samuelson's model to include the entire population and not only workers and retirees (Arthur and McNicoll 1978). This was done by including age-specific labour productivity and consumption throughout the entire life cycle. They showed that, as long as the interest rate is equal to the population growth rate, then population growth will lead to economic growth in countries where the average age of productive individuals is lower than the average age of consumers. The fundamental conclusion is the same as Samuelson's; population growth will have a positive influence on economic welfare as long as the mean age of the producer is lower than the mean age of the consumer.

This was exactly the situation that prevailed in Sweden at the beginning of the twentieth century. The share of children declined through declining fertility, pushing up the average age of the consumer. The smaller family sizes resulting from lower birth rates enabled women to work outside of the household. Population growth at this time was still substantial, however, with each generation still larger than the preceding one, implying positive population momentum. Together with strong economic growth during the post-war period, it allowed for reforms of the pension system as well as other, more general welfare reforms. A beneficial demographic situation such as this ends when new generations of workers become smaller than those retiring and when population ageing becomes driven by the decline of mortality among the elderly.

Figure 2.3 presents earnings and consumption over the life cycle in Sweden in 2003 based on Forsell et al. (2008). Here it is clear that costs increase towards the end of the life cycle. From their early 20s through 70 years old, the average Swede consumes 200,000 SEK/year. This consumption is more than offset by labour income, and it is not until the individual reaches his/her late 60s that consumption exceeds income. At this point, consumption begins to rise in a monotonic fashion, to the point where individuals in their 90s consume between 400,000–500,000 SEK/year. This increase in the costs is publicly funded, with private consumption remaining stable at less than 100,000 SEK/year. It is primarily healthcare costs that increase by age, with the largest component being inpatient care during the final years of life.

One point not covered by this figure, however, is capital income. While an increase in savings can be expected to provide significant income, it will still only partially offset the huge increase in costs at the end of life.

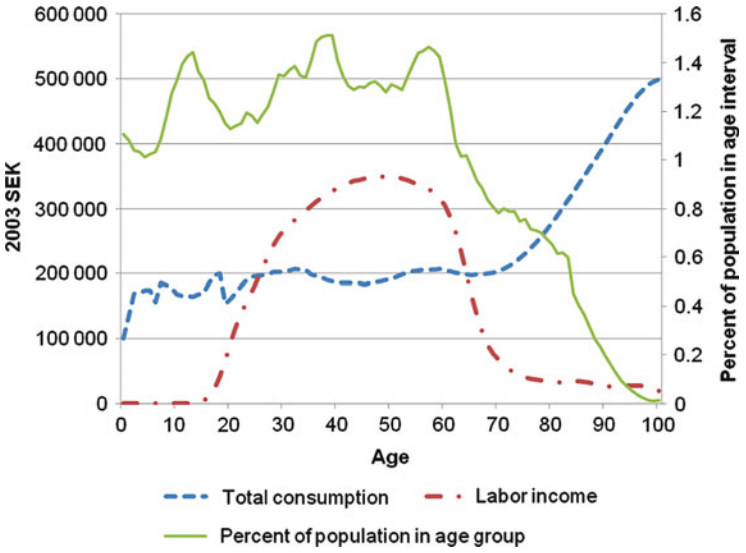

Fig. 2.3 Age-specific consumption, labour income, and size of cohorts, Sweden 2003
Source: Forsell et al. (2008)

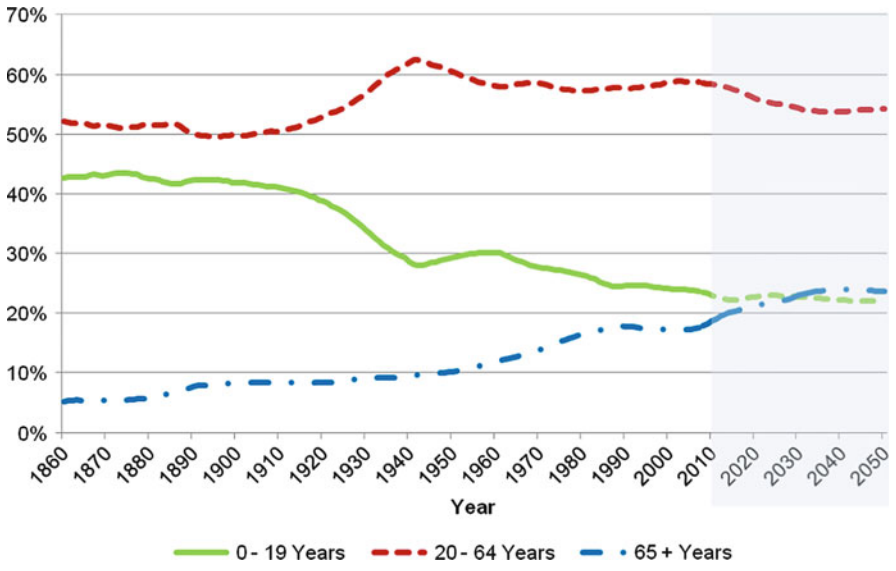

Fig. 2.4 Share of the population in age groups 0–19, 20–64, 65+, 1860–2050
Source: Statistics Sweden

Figure 2.4 shows the share of the population aged 0–19, 20–64, and 65+ from 1900 onwards with official forecasts from 2008 to 2050 from Statistics Sweden (Statistics Sweden 2004). These forecasts are based on the assumptions that life

expectancy will increase to 84 years for men and 86 years for women, and that the total fertility rate will stabilize at 1.83 from 2029 onwards. The share of the population of working age is expected to decline continuously until 2050 due to the increase in the share of people aged 65 and higher.

Figure 2.5 combines the information from Figs. 2.3 and 2.4. We have calculated future costs of consumption as well as incomes by single-year age groups, thereby assuming that age-specific consumption and production remain constant at 2003 levels, or that they change at the same rate. As in Fig. 2.3, income from capital is not taken into account. Based on this projection, we calculate the difference in aggregated lifetime consumption and labour incomes for each year up to 2050 and index this series to the base year 2008. The change over time is driven by the ageing of the population, but here we take not only the numbers in each age-group but also the age-specific consumption and production patterns into account.

This total life cycle deficit, defined as the aggregated consumption minus earnings for every age category in a given year, will, as shown in the figure, increase by 350% by 2050. In this development we can see the strong economic impact of population ageing. This deficit is largely financed by positive transfers from other countries, primarily in the form of capital income. It is unlikely that increases in this source of income will fully cover future deficits, since this would require very large investments abroad. The increase in the life cycle deficit over the next 40 years corresponds to an increase in labour productivity of roughly 0.3% per year, a bit more until 2035, when population ageing levels off. While it may seem a fairly easy task to increase labour productivity at this rate, there is evidence that increasing productivity will not

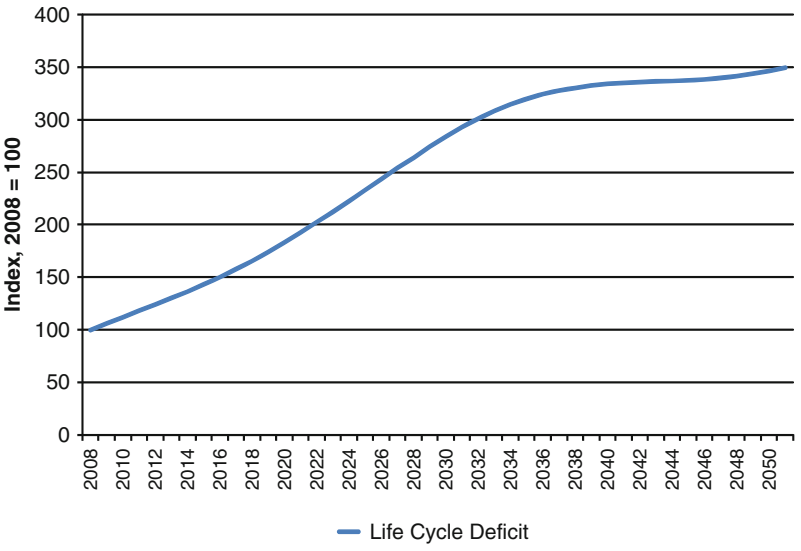

Fig. 2.5 Projected aggregated life cycle deficit, 2008–2050. 2008 = 100
Source: Calculations based on Statistics Sweden and Forsell et al. (2008)

be particularly helpful. As productivity rises, wages increase, not only for the productive occupations, but even those occupations which do not see improvement in productivity tend to ride along on the wave of rising wages. The phenomenon, often called Baumol's disease, is also accompanied by rising public sector expenses to the extent that productivity increases can increase overall consumption more rapidly than production (see Arbejdsmarkedskommissionen 2009).

The alternative is to increase the tax rate, but since increasing tax levels is likely to create problems in our globalized world, as shown by Hansson (Chap. 3), we need to increase the tax base instead, by expanding the supply of labour to offset a rising surplus of consumption over production.

2.4 Can We Increase Fertility?

Increased fertility would, over a 25–30-year period, have a negative effect on the balance between production and consumption. This is due to the fact that very few individuals work before the age of 25 years and parents tend to reduce their supply of market labour. In the longer run, however, a period of increased fertility can meet the challenge brought on by an increasing share of elderly in the population. The question at hand is how do we arrive at such a position? One possibility is to take measures to further increase the compatibility between labour force participation and childrearing. Another possibility is to redistribute some of our consumption to childrearing. As incomes rise, a relatively smaller share of the income is spent on necessities such as food, clothing, and shelter. This should create the economic conditions to allow more children per family. One feature of the current Swedish labour market which points to the ability to increase incomes is the fact that the average number of hours per week spent in market activity, distributed evenly among all individuals of working age, only amounts to 21 hours per person (SOU 2004, p. 11). Given these factors, it appears that the economic preconditions for increased levels of fertility indeed do exist. Nevertheless, very few scholars today believe that fertility rates will increase more than marginally in the future and even if they do, an increase in fertility will not be of any help during the period of rapidly increasing share of elderly up to 2035.

2.5 Is Immigration the Answer?

If increased fertility levels are seen as an impossible solution to increase labour supply in the next 30 year period, what else can be done to counter the effects of population ageing? One solution that is regularly put forward is increased migration. There tends to be an overrepresentation of migrants in the lower working ages, and as such, immigration would appear to be a good solution that lowers the average age of the producer without increasing the population share that is below

working age. However, this intuitive understanding is not quite as straightforward as it may appear.

Sweden has been a country of net immigration since the 1930s (Lundh and Ohlsson 1999; Statistics Sweden 1999, p. 130). Almost 25% of the Swedish population today was either born abroad or has at least one parent who was born abroad. This raises the question of how the age structure would have looked in the absence of migration. Figure 2.6 shows the share of the population over the age of 65 in two separate scenarios – one depicting the actual development, and one showing a counter-factual development in which no immigration takes place. We can see that immigration has had a restraining effect on the share of elderly in the population, but this effect has not been very dramatic. If Sweden had not experienced any immigration, the share of the population above the age of 65 would be only 2.5 percentage points higher than it actually is, or 20.2% instead of 17.7%. These calculations take into account not only immigration, but also the effects of immigrant fertility. These results indicate that population ageing can be offset by immigration, but only to a limited extent. Another factor that must be considered is that immigrants also become older, which means that immigration must increase at an increasing rate if it is to compensate for population ageing.

A further argument for immigration helping to "correct" the shifting age structure is that immigrants tend to arrive during their childbearing years and generally have more children per family than native Swedes. While these statements are true, the latter should not be exaggerated. Foreign-born individuals comprise roughly 10% of the Swedish population, yet account for ~20% of all children

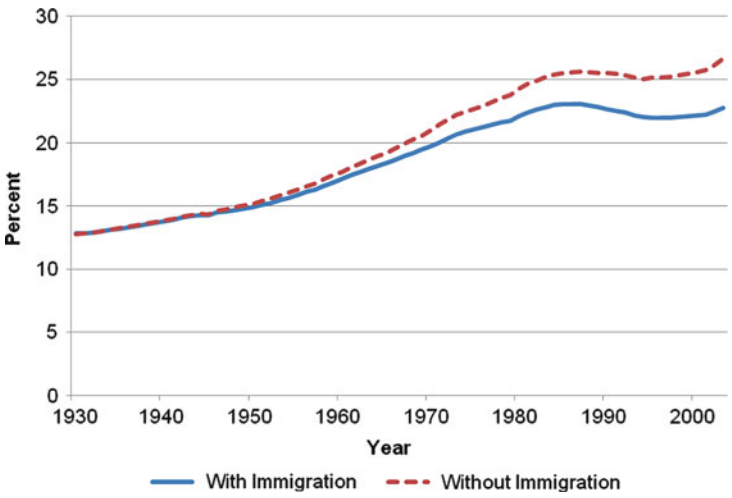

Fig. 2.6 Share of the population above the age of 65, 1930–2003. Actual development and the development as it would have been without any immigration
Source: Own calculations using yearly data on births, deaths and migration in one-year age groups from BiSOS; Befolkning (Statistics Sweden)

born (Statistics Sweden 2004, p. 200). This high figure, however, can largely be explained by the fact that the foreign-born are overrepresented in the childbearing ages and are more likely to be married or cohabiting than native Swedes. An examination of birth rates within marriage shows that foreign-born women tend to have *fewer* children than Swedish women of the same age. While fertility patterns do vary widely among women of different national origin, there is evidence to suggest that even women from cultures with high fertility rates adapt quickly to Swedish fertility patterns (Andersson 2004).

Stable population theory has been expanded in recent decades to include the effects of migration. Empirical studies show that the effects of immigration on the age structure of the receiving society can vary widely depending on the fertility of the migrants. Thomas Espenshade (1994) calculated the effects of immigration on the American age structure, and found only a marginal effect under the assumption that immigrants adjusted their fertility to American levels. Stefan Jonsson and Michael Rendell (2004) came to the opposite conclusion under the assumption that immigrants retain home-country fertility levels instead. These results make it clear that the potential impact of immigration is dependent upon the assumptions made regarding post-migration fertility. As mentioned above, there is evidence that migrants that come to Sweden adjust to Swedish levels, leading to the conclusion that immigration will not result in the large shifts in age structure needed to reverse population ageing. The infeasibility of a migration solution is illustrated by the fact that the EU15 would need to import 700 million immigrants between 1995 and 2050 simply to keep the ratio of those in working ages and those above 65 constant (UN 2001).

If immigration is to alleviate the problems associated with population ageing there must be more than simply an increase in the number of people in fertile ages or below. The primary problem associated with population ageing is the increased costs linked to healthcare and pensions, in the face of a decreasing workforce. For immigration to work as an effective brake on population ageing there is a precondition that immigrants become well-integrated into the Swedish labour force. This is not a particularly realistic expectation, given Sweden's experiences with immigration over the past two decades. Immigrant integration in Sweden has been a failure since the 1970s. Unemployment among foreign-born men was 7 percentage points higher than for native males in 2001 (Bennich-Björkman et al. 2002), but this is only part of the problem. Unemployment figures are based on those in the labour force, making the problem look less severe than it actually is. Only 78% of all foreign-born men were in the labour force in 2001, compared to 86% for Swedish-born men. Thus, 22% of all foreign-born men aged 20–59 were either in labour market retraining programs or completely outside of the labour force in 2001. This gives us an actual unemployment rate (redefined as those without employment/all those aged 20–59) of roughly 30% for immigrants and only around 18% for natives. The failure to integrate those immigrants in Sweden today must be seen as a warning sign for future integration.

This argument has been partially refuted by claims that new immigrants will be recruited for existing jobs, and as such will avoid the integration issues faced by

refugees and others arriving without a job offer in hand. This argument sounds reasonable, but also here we can find historical reasons which cast doubt on its long-term validity. Swedish migration from the 1950s through the early 1970s was dominated by exactly this type of labour migration. Moving the clock forward 40 years we can see that the labour migrants from that period experience higher unemployment rates than natives today, have higher rates of sickness absence, and are over-represented among those with disability pensions (Bengtsson and Scott 2006).

2.6 Other Ways to Solve the Problem?

Since an increase in fertility will not have any positive effect over the next 25–30 years and the effect of immigration is simply too small, how can we then expand the tax base? Is the solution an increase in the number of hours actually worked per worker and/or an increase in the share in working age that actually have employment?

There exists a great potential to increase the tax base through increasing the number of hours worked. Europeans work, on average, several weeks less per year than their American counterparts. Swedes, for example worked on average 40.6 weeks in 2009, while Americans worked 44.2 weeks (OECD 2009). The difference between the United States and Sweden is largely found in longer vacations.

For the Swedish case, sickness absence and other non-vacation absence accounts for a great deal of the difference from the European average. These figures are only applicable for those who have employment. Taking the Swedish case, a high of about 80% of those in working ages were actually employed up until 1990, at which time the share dropped to about 70% (AKU 2007). This implies that a considerable portion of the potential workforce was outside of the labour market. Reasons for this can be found in early retirement due to illness or injury or simply that a share of the population has never successfully established a foothold in the labour market.

A few of the more obvious ways to increase the tax base are: more rapid completion of education, reduced unemployment, reduction in the size of the informal labour market, a shift from home to market work, reductions in sickness absence, and an increase in the retirement age. All of these steps would be helpful, and incentives and possibilities to achieve them are needed. A recent study for Denmark has shown, however, that the potential gains of increasing the labour supply of the elderly are greater than those of increasing the supply in other ages (Arbejdsmarkedskommissionen 2009). Since the situation is rather similar for Sweden, the question is how much does pension age need to increase to offset the negative effects of population ageing?

Based on the age-specific income and consumption patterns shown in Fig. 2.3 and the official population forecasts that we previously used (Statistics Sweden 2004), we have calculated the number of extra years individuals would have to remain in employment to keep age-specific consumption from falling. Under the assumption that we could add more of our best years, when the gap between labour

earnings and consumptions is highest, which is around age 50 years, we find that we would need to insert 5 years of work to maintain the 2008 life cycle deficit. In terms of raising the retirement age, however, it is not likely that we would see additional years of labour at 50 year-old levels, but rather at 65 year-old levels. Under this assumption, Sweden would need to increase the retirement age by roughly 12 years to keep age-specific consumption from falling. How does this compare with future increases in life expectancy?

Our calculations are based on the official forecast from Statistics Sweden, in which life expectancy at birth is assumed to increase to 83 years for men and 85.5 years for women until 2050; an increase of 3.9 and 2.35 years respectively. Against this, an increase of age at retirement by even 4 or 5 years seems very high. We must, however, also take into account the increase in life expectancy in previous years when retirement age was stable or even declining. Expected remaining years of life at age 65 are presently 18 years for men and 21 years for women. One should also add that the life expectancy forecasts from Statistics Sweden are very pessimistic. Even if we do not match the best practice in the world, Sweden could very well see life expectancies higher than the official forecast for 2050. This will, however, also imply an even faster increase in the share of elderly than predicted, but also allows considerable possibilities to increase the retirement age.

Adding years to our lives is likely to delay healthcare costs, since a large fraction of the costs comes from inpatient healthcare in the last years of life. Adding years of working requires, however, that we add healthy years as life expectancy increases, and there exists some ambiguity whether this really is the case (see Parker and Thorslund 2007 for Sweden; Christensen et al. 2009 for a general overview). Thus, the solution is perhaps not to be found by simply raising the retirement age, but also through an increase in labour force participation at other ages, both of which rely on the simultaneous creation of employment to absorb these increases.

While the costs for healthcare at older ages appear particularly daunting, the pension system is also an important issue with an increasing share of the population spending a longer period of time in retirement. This is the case with the "pay-as-you-go" system of financing the pensions, but the problem could be alleviated through the recent change in the system to one where individuals are made aware of the life-cycle aspect of pension systems, as discussed in Kruse (Chap. 4). The new pension system is designed to keep the total costs of public pensions at a fixed rate of about 11% of GDP. To keep the value of the pensions from falling relative to income of other groups, the share of pensioners need to stay stable at around 18%, which it is today. That will be obtained by increasing age of retirement to 70.5 years by 2050.

2.7 Summary

The share of elderly doubled in Sweden from 1950 to 2000, making Sweden a forerunner in terms of population ageing. During recent years other countries have caught up and the process of population ageing continues, with the world's share of

elderly being likely to more than double by 2050. During the first stage of population ageing its cause, the fertility decline, was also its solution. The increasing costs of population ageing were more than compensated for by diminishing costs for children. The next step of population ageing will be due to falling adult mortality and the old-age dependency ratio will increase to higher levels than ever before. The extensive immigration experienced since the 1950s has not had much effect on slowing population ageing, and cannot be expected to play a major role in the future. New baby-booms are welcomed but it takes some 25–30 years until it will improve the situation.

The net impact of population ageing corresponds to an increase in labour productivity of roughly 0.3% per year, but a simple productivity increase will not solve the problem. Since improvements in labour productivity tend to increase consumption more rapidly than production, we cannot expect that productivity improvements will be the sole solution to the challenge of ageing. Rather, the focus must be on improving the tax base by increasing the total number of hours worked. Our calculations show that it will take an increase of the retirement age of about 5 years to keep consumption from falling during the first half of the twenty-first century.

Even if it is possible to successfully navigate all potential problems of increasing the labour supply, there remains one final problem, namely whether the Swedish economy will be able to absorb this substantial increase in the labour force necessary to offset population ageing. The recent phenomenon of "jobless growth" in Sweden points to this obstacle. Needless to say, there exists no single solution to the problem associated with an ageing population. Since no demographic solution exists, at least not in a 30-year perspective, the focus is on increasing labour supply and/or productivity. If the economic impacts of population ageing are to be managed, it is likely to be the result of a combination of the abovementioned solutions.

Given the awareness of future problems with the public funding of an ageing population, individuals would have greater incentives to save throughout their careers to ensure an adequate standard of living in older ages. This savings would have the dual effect of providing for the elderly and creating a capital pool which could be invested to provide for sustainable economic growth. The additional capital saved and invested to provide for future retirement could account for a portion of this productivity growth, but cannot be expected to solve the problem completely.

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Chapter 3
In This World Nothing Is Certain but Death and Taxes: Financing the Elderly

Åsa Hansson

Abstract This chapter discusses possible ways to finance the increased demand for resources from the elderly through the tax system. Maintaining the benefits at today's level will require either increased tax burden on those working or an expanded tax base. As a country with one on the world's highest tax burdens, Sweden has little or no room to raise additional tax revenues through increased tax rates without causing substantial welfare costs. There is, however, some room to raise additional tax revenues by increasing the number of hours worked in the economy. This will likely not be enough however and alternative ways need to be sought and found in order to finance the increased demand from the elderly.

3.1 Introduction

Sweden, like many other countries, faces a demographic challenge in that the share of the elderly to the working population is predicted to increase (see, Chap. 2). As the number of elderly grows so does the demand for resources (such as pensions, social and medical care) directed towards them. Today, the lion's share of these expenditures is financed through the public budget by taxes. It is thus, to a large extent, today's working population that finances the costs of today's elderly. To maintain the welfare state benefits at today's level with the current system, either the tax burden on those working has to increase or the tax base has to expand by, for example, increasing the amount of hours worked in the economy or by raising productivity. The purpose of this chapter is to discuss to what extent the increased demand can be met by increased tax revenues.

Å. Hansson
Department of Economics, School of Economics and Management, Lund University, Tycho Brahes väg 1, 223 63 Lund, Sweden
Faculty of Engineering, Lund University, Ole Römers väg 30, 221 00 Lund, Sweden
e-mail: asa.hansson@nek.lu.se

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The demographic challenge is not unique to Sweden; most developed countries have similar or even worse demographic issues that need to be dealt with, possibly by increasing taxes. Sweden is in some respects a step ahead of many countries in this demographic development as it obtained a large share of elderly earlier than many other countries, which has forced Sweden to already take steps to reform and make the "welfare state" more sustainable (see, Chap. 7). The pension system, for instance, has been reformed and benefits are now contribution rather that benefit based. Part of the pension is based on a funded system and, hence, less dependent on current tax revenues (see, Chap. 4). Compared to many other countries, Sweden is in some respects relatively well off.

Even if other countries may need to raise taxes to meet their challenges, Sweden's situation is troublesome as it already has one of the world's highest tax burdens, leaving little or no room to raise additional revenues through increased taxes. Moreover, and even more worrying is that the demographic challenge has surfaced at the same time as national economies are becoming more interdependent, making it costly to deviate in tax and expenditure structures from the rest of the world. It is therefore unlikely that tax rates can be increased further without losing capital and productive labour to lower-tax countries. There is, however, some room to raise tax revenues by expanding the tax base through, for instance, increasing the hours worked in the economy. This will likely not be enough, however, and alternative and creative ways to finance the welfare of elderly need to be sought and found.

3.2 Background

Sweden has one of the largest public sectors and consequently one of the highest tax burdens in the world. What distinguishes the Swedish public sector from public sectors in many other countries is that the government in Sweden plays a large role in providing social services to its population in all stages of life. In other parts of the world these services are to a greater extent provided by the family (e.g., in Southern Europe) or the market (e.g., in the US). There are several economic arguments in favour of providing this social protection collectively rather than through private markets. First, moral hazard is a critical problem for insurance against such risks as becoming poor, and private markets are unlikely to operate at efficient levels or to arise altogether. Similarly, adverse selection may also discourage the creation of private social protection markets. Moreover, the problem of free riders may limit voluntary redistribution even when most people care about the welfare of others (at least to some extent). Finally, individual and local risks can be pooled and bundled to achieve protection at lower costs when done collectively. Compulsory redistribution may therefore result in Pareto improvements (that is, a situation where everybody is at least as well off). On the other hand, however, there are efficiency costs associated with publicly financed and provided redistribution, making it more costly than private redistribution.

Table 3.1 Public sector transfers, % of GDP

	2002	2005	2010	2015	2020
Transfers to households:	18.6	18.46	18.7	19.4	19.6
Old age	8.6	8.9	9.3	10.0	10.2
Sickness	4.4	4.5	4.5	4.4	4.4
Children/education	2.4	2.3	2.3	2.3	2.4
Labour market	1.5	1.2	1.1	1.1	1.1
Other	1.7	1.5	1.5	1.5	1.5
Transfers to firms	1.8	1.4	1.3	1.3	1.3
Transfers abroad	1.1	1.5	1.5	1.5	1.5
Sum	21.4	21.3	21.5	22.2	22.4

Source: SOU (2004:19), attachment 1–2

Table 3.1 shows how public transfers to different groups and purposes have developed and are projected to develop until 2020 in Sweden. In 2002 and 2005 transfers for old age constituted just under 50% of total transfers to households, and by 2020 this share is projected to be slightly over 50%. The rising trend in transfers directed towards the elderly is projected to continue also after 2020. Demographic pressure is actually predicted to be relatively low until 2015 and thereafter increase drastically until 2035 (SOU 2004, p. 19). A conservative estimate is that public expenditure will grow by more than 5 percentage points between 2005 and 2035 alone from the increased demand from the demographic development (SOU 2004, p. 19). Disaggregated, pension payments are predicted to rise from 8.2% in 2007 to 8.9% of GDP at the beginning of the 2030s, and expenditures on health and elderly care from 10% in 2007 to 13% of GDP in 2050 (Proposition 2006/07, p. 100).

Considering that the demand for other types of welfare services – such as education and health care for non-elderly – likely will increase as well, the government faces a considerable challenge trying to finance this increased demand. Many of the goods and services that the government provides have an income elasticity exceeding one, meaning that when income goes up by 1% the demand for these goods (e.g., education and healthcare) increases by more than 1%. Consequently, we will want more of these goods as we get richer. At the same time, many of these goods and services suffer from what is often referred to as Baumol's disease. While many private goods are produced more efficiently and, hence, at lower costs due to technological developments, for some publicly provided goods and services it is difficult to take advantage of these technological developments (for instance, it is hard to increase the pupil per teacher ratio) keeping the production cost of these goods and services at high levels. Yet other publicly provided goods and services, healthcare probably being the most prominent example, have benefited considerably from technological development but with increasing demand and costs as a consequence (see, Chap. 6). This together with non-demographically driven increased demand (e.g., better healthcare and education) will lead to higher tax burdens even without the demographically driven increased demand.

What makes the situation particularly problematic today is that our economy is much more dependent on the rest of the world and will likely be even more so in the future. Even if the empirical evidence of tax competition – that is, where countries

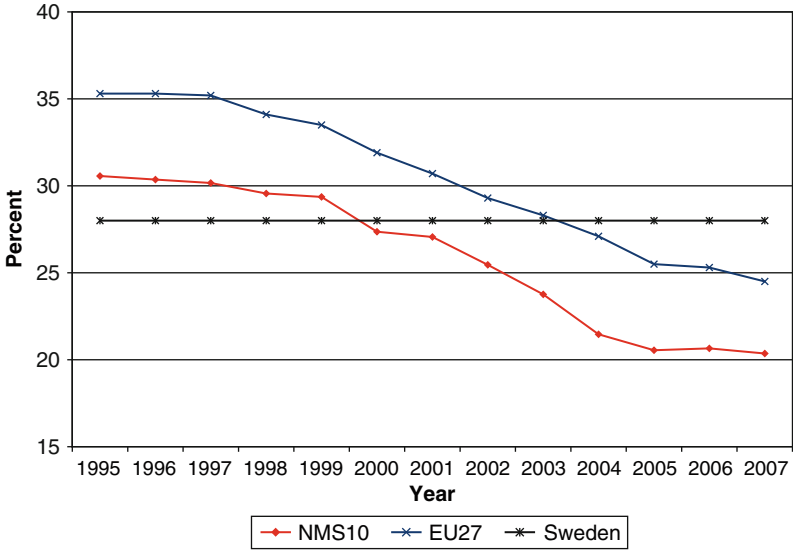

Fig. 3.1 Adjusted top statutory corporate income tax rates for Sweden, the EU27 and the 10 New Member States (NMS10), 1995–2007
Source: Eurostat (2007)

compete by lowering tax rates in order to attract and retain attractive production factors (capital and labour) – has been mixed, there is now mounting evidence that statutory corporate tax rates have declined due to tax competition (Devereux et al. 2002; Dreher 2006; Winner 2005). Figure 3.1 shows how the top statutory corporate income tax has developed since 1995 in the EU. The average for the EU27 has declined with more than 10 percentage points, from around 35% in 1995 to below 25% in 2007. The average among the 10 New Member States has also declined with around 10 percentage points and is now barely over 20%, putting additional pressure on "old Europe" to lower their rates. Regarding Sweden, the corporate tax rate was fairly competitive before and was as a consequence of increased competition recently lowered to 26.3%.

Despite substantial tax rate decline (average OECD statutory corporate tax rates dropped by 12 percentage points between 1986 and 2003 (OECD 2001, 2004)) tax revenues from corporate taxation have not yet decreased, suggesting that the tax base has increased to counteract tax rate declines.[1] In addition, the amount of total

[1]In fact, researchers have not been able to find a robust negative relationship between integration and effective corporate tax rates based on measures of corporate tax revenues. Slemrod (2004) and Dreher (2006), for example, found a positive relationship between integration and effective corporate tax rates while a negative relationship between integration and statutory tax rates suggested that the effect of lower statutory rates was offset by increases in the tax base.

tax revenue generated from corporate taxation is relatively small (typically around 5–6% of total revenues). Declining statutory corporate tax rates due to tax competition may therefore be less problematic for financing public sector activities. However, it is important to bear in mind that tax competition will generate both winners and losers and countries that do not succeed in attracting or retaining capital will likely be losers.

It will be more difficult in terms of financing the public sector if labour taxes are forced down due to tax competition. So far there is little evidence of widespread tax competition for attracting labour as labour is much less mobile than capital. Studies are nevertheless finding a negative relationship between increased labour mobility and labour tax rates (e.g., Razin et al. 2002) and few doubts that labour mobility will increase eventually putting pressure on labour tax rates as well. However, capital tax competition can be enough to erode the labour tax base if firms relocate to low-cost countries and thereby reduce domestic jobs.

Top statutory tax rates on labour decreased on average by 20 percentage points between 1980 and 2000 (Gwartney and Lawson 2001). Tax competition is typically not credited for this reduction as the decreases took place well before the integration process deepened. Instead, increased awareness of the large welfare costs associated with high marginal tax rates and the resulting tax rate-cutting base-broadening reforms are credited for this reduction. Figure 3.2 shows that the implicit tax rate (which considers the tax base as well as the tax rate) has been fairly stable since 1995 despite considerable reductions in the top marginal tax rates. Again, Sweden is an outlier with a 10 percentage point higher tax rate compared to the average for the EU27 and the 10 New Member States.

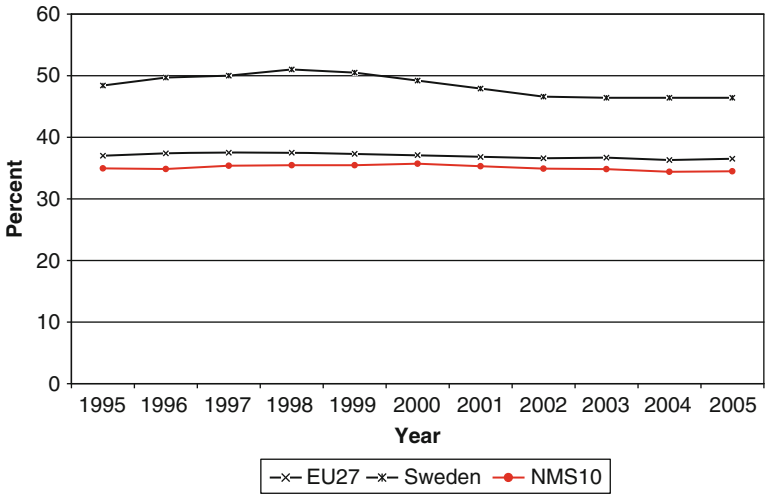

Fig. 3.2 Implicit tax rates on labour in Sweden, the EU27 and the 10 New Member States, 1995–2005
Source: Eurostat (2007)

So far, tax competition has had a very little impact on overall public spending as tax revenues have not declined by as much as feared. Tax competition can limit countries' ability to conduct independent fiscal policy by reducing the overall revenues available but also by affecting what the government spends its revenues on. Redistribution between different income groups and cohorts becomes more costly as net contributors have incentives to leave and net beneficiaries have incentive to locate to countries with generous welfare systems. In addition, countries can try to attract and retain mobile production factors by influencing the mix of public spending. Because different types of government spending are valued differentially by the various production factors, countries may be pressured to use their resources in ways favourable to desired factors. To the extent that capital is more mobile than labour, it has been suggested that increases in integration lead to a shift in expenditures toward those more likely to attract capital at the expense of those benefiting individuals (e.g., Keen and Marchand 1997). As labour becomes more mobile, however, this effect will diminish as expenditures that benefit residents may also attract productive labour (Bénassy-Quéré et al. 2005). This so-called fiscal competition puts additional limitations on individual countries to conduct independent fiscal policy and it is likely that tax competition and fiscal competition will make redistribution between different cohorts particularly costly and consequently be a disadvantage for the elderly.

The empirical evidence of fiscal competition is limited. So far there is little evidence that tax and fiscal competition have had any major impact on public spending (Hansson 2007a). There is some evidence, however, that increased integration has had a negative impact on public investment expenditures. While public transfers and public consumption have remained unaffected or even increased (transfers) as a result of integration, the amount of public investment or expenditures benefiting mobile capital have declined (Hansson and Olofsdotter 2008). One possible explanation is that it is politically easier to cut public investments than public transfers or consumption when the public sector is forced to cut down due to declining revenues. Results from Lindbom (2007), showing that cutbacks in transfer programs tend to be made in such a way that they go unnoticed by the citizens, are consistent with this hypothesis.

3.3 Are Increased Taxes the Solution?

To discuss the potential to increase the tax revenues in order to meet the growing demand from the elderly, it is useful to first look at how tax revenues in Sweden are distributed between different taxes. Table 3.2 shows how tax revenues, as a share of both GDP and of total tax revenues, and corresponding tax rates are distributed between different taxes in Sweden. The first column shows the revenues from different taxes as a fraction of GDP while the second column presents the tax revenue as a share of total tax revenues for the different taxes. The third column lists the tax rate that applies (with differentiated taxation all rates are reported).

Table 3.2 Tax revenues from different taxes as percentage of GDP and total tax revenues in 2004

	Percent of GDP	Percent of total tax revenues	Tax rate (2006)
Labour income tax, central government	1.4	2.7	0, 20, 25[a]
Labour income tax, local government	13.9	27.7	31.6
Social security contributions, employer	13.6	27.0	32.28
Social security contributions, self-employed	3.1	6.2	30.71
Taxes on goods and services	13.1	26.2	0, 6, 12, 25[b]
Total taxes on labour:	*45.1*	*89.8*	
Corporate income tax	2.8	5.5	28
Property tax	0.9	1.9	1
Capital gains tax	0.9	1.8	30
Net wealth tax	0.4	0.8	1.5
Total taxes on capital:	*5.0*	*10.0*	
Taxes not allocated	0.1	0.2	
Total taxes:	*50.2*	*100*	

[a]The central tax rate is progressive; for a majority of individuals this rate is zero (they only pay local tax rate). A 20% rate applies to incomes above the threshold and an additional 5% is paid on high incomes

[b]The general VAT rate is 25% but special rates of 0, 6, or 12% apply to certain goods and services

Source: Skatteverket (2006)

A considerable amount of tax revenue stems from taxes on labour. If tax revenues from taxation of goods and services are included in labour taxes, as they commonly are, nearly 90% of all tax revenue comes from labour taxation. The majority of the revenue from labour taxation comes from the local income tax, social security contributions and taxes on goods and services.

In contrast, taxes on capital including both corporate taxation, property, wealth and capital gains taxation, only make up 10% of the total tax revenue. The revenue generated from these taxes is relatively modest despite comparatively high tax rates, 28 and 30% on corporate income and capital gains respectively, indicating that the tax base for these taxes is small.

Is it possible to finance the growing demand for welfare services for the elderly by expanding the public sector - either through increasing the tax rates or/and the tax base? This issue will be discussed in the following section, beginning with the possibilities of increasing tax rates on labour and capital, and then moving on to possible ways of expanding the tax base.

3.3.1 Increasing Tax Rates: A Non-solution

One possible way to boost tax revenues is by increasing tax rates. When tax rates are raised, however, so is the efficiency cost or welfare cost associated with taxation. A tax on, for example, labour creates a wedge between what the employer pays and what the employee receives. It becomes more expensive for employers to

hire or/and less profitable for workers to work, and as a result less workers are hired and/or workers supply less work.[2] Hence, the tax does not only reduce our take-home income but it also changes the amount of hours we work. This shift in behaviour is a distortion created by the tax and gives rise to an extra cost for society, typically referred to as the excess burden of taxation. Put differently, this extra cost (the excess burden) means that the total costs of raising one extra Swedish krona (SEK) in tax revenue exceeds one SEK.[3] For example, if it costs SEK 1.50 to raise one additional SEK in tax revenues then the excess burden is SEK 0.50. For the tax to be socially motivated, the SEK must then be spent in such a way that it generates increased benefits that at least cover the cost (that is, the additional tax SEK must generate benefits to society of at least 1.50 SEK).

When designing tax systems knowledge of the magnitude of the excess burden is crucial. Put simply, the size of the excess burden depends on the tax rate and how responsive individuals' behaviour is to changes in the tax rate. The higher the initial tax rate is and the more responsive the individuals are to tax rate changes, the higher the excess burden of increasing the tax rate is. In general, it is more efficient to have a lower tax rate on a broad tax base than a high tax on a smaller tax base. The main motivation behind the many tax reforms undertaken around the world in the 1980s and 1990s was to broaden the tax base and to decrease the tax rate in order to make the tax system less costly. At the same time, it is more efficient to tax income that is less responsive to tax rate changes (less elastic) than income that can easily be adjusted to avoid taxation.

Thus, it makes more sense from an efficiency point of view to slightly increase a tax rate on a broad tax base (e.g., labour income) than to increase a tax rate on a smaller tax base (e.g., capital) somewhat more, in order to generate the same amount of tax revenues. This suggests increasing taxation on labour income rather than on capital. In addition, labour income is less responsive to taxation than capital income (that can relatively easy be placed in tax havens) providing additional arguments for increasing labour taxes rather than capital taxes. Even though labour is less mobile than capital there are indications that labour mobility is increasing, especially among the more educated, providing arguments not to increase the tax rates on the more educated. But let us discuss the benefits and drawbacks of increasing each tax, one at a time, starting with taxes on labour income.

3.3.1.1 Increasing the World's Highest Labour Tax Rates: A Non-solution

As labour is less mobile than capital and generates the majority of all tax revenue, increasing the labour income tax seems like the most natural candidate among the

[2]This result hinges on the substitution effect dominating the income effect, which empirical studies generally tend to find support for.

[3]Estimates of the excess burden in Sweden typically rank between 0.5 and 3 SEK (Hansson 2007b). Generally, estimates that are more recent have fallen in the upper end. If the excess burden is 2 SEK, then it costs 3 SEK to raise an additional SEK in tax revenues.

tax rates. The local (municipal) tax rate (a flat tax at 31.6% in 2006) generates most tax revenue (27.7% of total tax revenue). Moreover, it is the tax that finances the main share of social service expenditures (apart from pensions) directed towards the elderly. It thus seems natural to increase local tax to meet the increased demand from the elderly. The problem is, however, that the increased demand cannot be met with a one-time minor increase in the local tax. Predictions from the Long Term Commission (SOU 2004, p. 19) show that the local tax rate would need to increase by 0.35–0.40 percentage points every year to meet the augmented demand from the elderly, implying that the local tax would reach 40% in 20 years. As the tax burden on labour already is high, additional increases in the local tax would be associated with substantial welfare costs and likely reduce labour supply, and is therefore not a realistic way to finance the increased demand.

Increasing the central tax rate on labour income is not a realistic alternative either. First of all, this tax generates less than 3% of total revenue and would have to be raised substantially to generate enough revenue. Further, it is highly questionable if increased rates would generate additional revenues. Second, high-income earners tend to be more responsive to tax increases than lower-income earners, and increasing the tax wedge for them additionally would likely have serious negative impacts on their labour supply and give rise to large welfare effects. As is evident from Fig. 3.3, Sweden along with Denmark has the highest personal income tax rates making it costly to increase them further. Denmark is lowering its top rate in 2010, however.

Another seemingly reasonable "tax" to increase is the social security contributions that are intended, among other things, to finance pensions and generate a substantial share of total tax revenues (27 plus 6.2%). In Sweden, employers pay the social security contributions for all employed individuals while self-employed

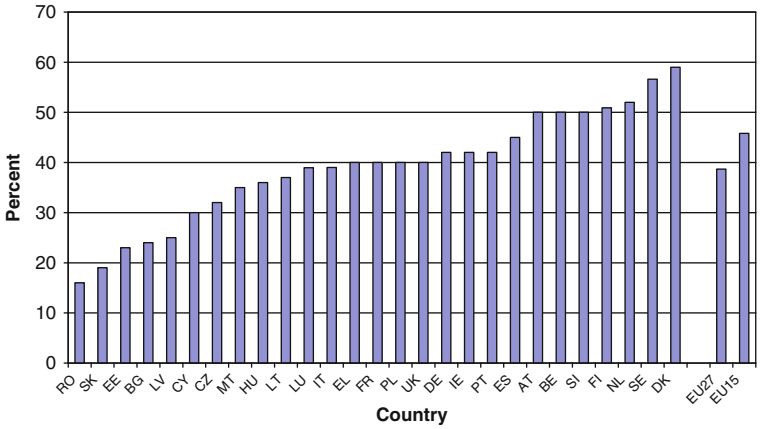

Fig. 3.3 Top statutory personal income tax rates in the EU in 2005
Source: Eurostat (2007)

individuals pay the tax themselves.[4] In other countries, the US for example, employers and employees share the social security contributions evenly. Be it employers or employees, it is largely irrelevant who pays the social security contributions, as the burden of the tax does not hinge on who legally pays the tax, but rather on how elastic the demand relative to the supply of labour is. The social security contributions paid by employers can be shifted to the employees by making their net-return from work less even though they legally do not pay the tax. Similarly, social security contributions paid by employees can be shifted to the employers by increasing the compensation that employees require in order to supply their labour and thereby increase the employers' labour costs (Palme and Palmer (1989) find empirical support for this to be the case). In reality, the burden of social security contributions is often split between employers and employees even if it is the employers who legally pay the tax.

It can also be discussed whether these contributions should be considered as taxes or a form of forced savings for retirement. If individuals believe that these contributions will generate future benefits exactly equal to the contributions, then the contributions can be seen as forced savings and not a tax. If individuals believe that the contributions will generate zero benefits later, the contributions are fully to be considered as a tax. In actual fact, part of the contributions will generate future benefits while other parts will not and can thus be considered a traditional tax. As it is only pension benefits that are contribution-based, the link between contributions and benefits is generally weak. The share of the contribution that is considered as tax differs between individuals as social security contributions are paid on incomes that do not generate benefits, and are paid at the same rate regardless of the individual's likelihood of utilising the benefit. A special social security tax of 24.26% applies to incomes that do not generate any pension benefits. Hence, of the total 32.28% paid in social security contributions, two-thirds of this is generally considered to be a tax.

It is interesting to note that social security contribution is the tax that has increased the most since the 1970s. One can speculate why this is the case. One hypothesis is that because this tax is paid by employers, taxpayers may tend to believe that this is a tax *on employers* rather than on their labour income and therefore be relatively easy to increase without massive protests from taxpayers. This tax is often referred to as an "invisible" tax as taxpayers tend to be less aware of it and its magnitude. Nevertheless, increasing this tax further, without corresponding increases in benefits, will add to the already high tax burden on labour income and generate high welfare costs – a measure that is difficult to recommend.

The third largest revenue generating tax is the indirect tax on goods and services, or the value added tax (VAT). The VAT is differentiated with a fairly high general rate of 25%, reduced rates of 12% on food, hotel accommodation and camping, and 6% on newspapers, books, magazines, culture and sports events as well as public

[4]In addition to the social security insurance provided through the government, most employees (90%) are covered by additional insurances through their employer. For instance, employers typically put aside 3.5% of the employees' income for her/him to invest in future pensions. Insurance for other purposes are also provided by the employer.

transportation, while some services (such as medical, dental, and social services, education, financial services and certain cultural and sporting activities as well as purchase and rental of immobile property) are exempt from VAT.[5]

The tax on goods and services is relatively high in Sweden compared to many other countries. One of the suggestions that came from the Committee on Tax Base Mobility (SOU 2002, p. 47) was that Sweden should adjust its tax on goods and services downwards towards the levels of the EU, rendering it unwise to increase rates. Figure 3.4 compares the implicit tax rate on consumption in Sweden with the average for the EU27 and the 10 New Member States. As is apparent from the figure, Sweden sticks out as an outlier with high rates on consumption. It is also noteworthy that the rates have tended to increase during the past few years, both for Sweden and for the 10 New Member States, while for the EU27 the average rate has been fairly constant. This is in stark contrast to taxes on labour and capital income that have been declining. It is, among economists, generally considered more efficient to tax consumption compared to income from labour and capital, and the shift from income taxation to consumption taxation is probably a result of it being increasingly costly to tax mobile

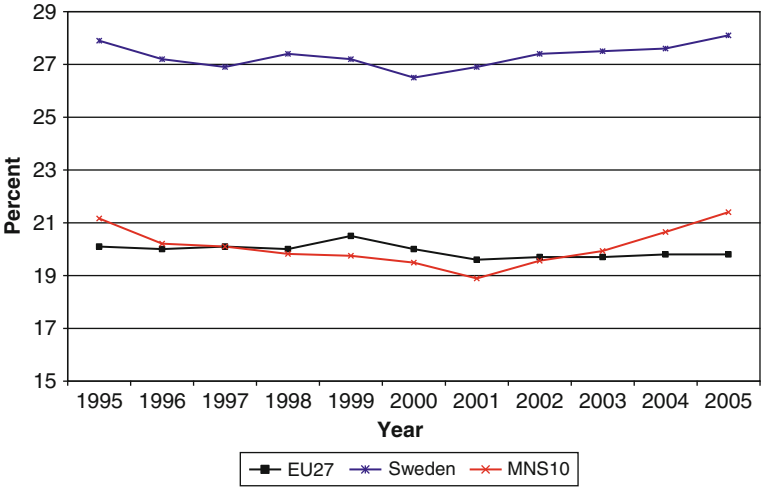

Fig. 3.4 Implicit tax rates on consumption in Sweden, the EU27 and the 10 New Member States, 1995–2005
Source: Eurostat (2007)

[5]Apart from the general VAT, certain goods and services are subject to excise and custom duties. Approximately a third of the revenues from taxation of goods and services stem from excise and custom duties. The largest contributor is revenues from energy and environmental duties (2/3), while excise taxes on alcohol and tobacco constitute roughly 1/5 of the total revenues from excise and custom duties.

capital and labour. For Sweden it is, however, hard to increase consumption taxation further, as consumption is already heavily taxed.

There may, however, be some room to increase revenues slightly by reintroducing a uniform tax on goods and services, thereby increasing the tax rate on food, newspapers and books, hotel accommodation, and public transportation to 25%. Reintroducing a higher tax rate on food in particular will generate additional revenues but may require compensation for low-income households to balance increased costs. Redistributing to low-income households using a lower VAT on food is not efficient. Income redistribution directly aimed at low-income households is more cost-effective.

While increasing excise and duties on alcohol may not be in line with the globalization process, increasing energy and environmental taxes has been fairly popular. For instance, lower labour taxes in exchange for higher energy and environmental taxes (the so-called green tax exchange) has been considered a win-win situation; lower labour taxes and hence reduced distortions (from the high labour taxes) and less negative externalities from lower energy use and pollution. Nonetheless, it would be unrealistic to expect significant tax revenue increases from further energy and environmental tax increases and it could also hurt Sweden's energy intensive industry.

To summarise, the labour tax rate in Sweden is already very high from an international perspective (see Fig. 3.2) and, even if labour is less mobile than capital, increasing the tax rate further will have substantial welfare costs in terms of a lower labour supply and substantial distortions. The total tax wedge, calculating the difference between what the employers pay for a unit of labour and what the employee can consume, is 59% for an individual paying only local taxes and 71 and 74% for those facing an additional central tax rate of 20 and 25%, respectively. These tax rates are already high from an international perspective and increasing them further would not only go against the international trend of lower labour tax rates, it would also be costly and unlikely to generate additional tax revenues. Estimates of the tax rate that maximises tax revenues (the peak of the Laffer curve) are indeed close to the tax rates in the higher range (estimates of the tax rates that maximise the Laffer curve range between 73 and 79% (Hansson 2007b)). If anything, Sweden should follow the international trend with lower labour tax rates. The existence of the expert tax (foreign "experts" are subject to a substantially lower tax rate compared to fellow Swedes) suggests that the tax rates on labour are too high in a global economy. There may be some revenue to gain by reintroducing a uniform VAT, however.

3.3.1.2 Increasing Taxes on Mobile Capital: A Non-solution

Of the capital taxes, the corporate income tax generates the most, even though it is a modest 5.5% of total tax revenues. The corporate tax rate in Sweden has recently been lowered to 26.3%. As Fig. 3.1 showed above, Sweden used to have a rate well below the EU average. Due to, among other things, increased tax competition

several countries – including Sweden – have lowered their rates, and all new EU member states have lower tax rates.

As the base for the corporate tax rate is considered to be the most mobile, raising this rate is more likely to reduce tax revenues than increase them. Internationally, corporate tax rates have been lowered without corresponding reductions in tax revenues; on the contrary, the revenues have increased despite lower rates, suggesting that the base has expanded due to tax rate reductions. It may therefore be wiser to further decrease the corporate tax rate in order to attract foreign capital and retain capital within Sweden, but it will unlikely generate considerable extra tax revenues.

The second largest revenue-generating capital tax is the property tax. This tax used to be a national tax of 1% on the assessment value of the property but has been replaced by a local fee amounting to a maximum of 6,000 SEK or 0.75% of the assessment value. This implies that most Swedes will face a lower property tax. This is particularly the case for households living in attractive areas or big cities. The reform is supposed to be fully financed within the housing sector and, as a result, the capital gains tax on realized property gains has increased from 20 to 22% together with the introduction of interest payments on postponed capital gains.

The reasons to reform the property tax were mainly political – many perceive the tax to be unfair, lacking public support and legitimacy. Among economists the tax was generally considered to be a tax with low welfare costs as the base (the value of the property) is relatively immobile. Perhaps a better alternative to turning the property tax into a flat local *fee* is to turn the tax into a local *tax/fee* that each municipally is free to set, as is common in almost all other countries. Having a local property tax set by each municipality would strengthen the link between the tax and the benefits that the revenue generates, and may thus increase the efficiency of the usage of the property tax. Arguably, a municipality that uses its revenues unwisely would loose citizens to a municipality that uses its revenues more efficiently. The threat of losing citizens to other municipalities would work as a disciplinary effect on the municipalities. However, when it comes to spending on the elderly, the property tax is a poor candidate as it would drive out non-elderly who would not receive benefits from the revenues. In any case, it is questionable whether it is wise to abolish property tax and replace it with a fairly low local fee. Especially in a global world where most tax bases grow increasingly mobile, the property tax base is a fairly immobile tax base that needs to be exploited wisely.

A third capital tax is the capital income and gains tax. Sweden employs a dual income tax system taxing capital income and capital gains at a flat rate of 30%. Compared to many other countries that tax capital income together with earned income, this is a fairly low rate. However, dividends are doubly taxed in Sweden, first at 26.3% at the corporate level and then at 30% at the shareholder level, rendering the effective rate quite high (48%). In addition, there is no deduction as is common elsewhere so even the first Swedish krona in capital gain is taxed at 30%. It is also common elsewhere to tax differentiate depending on holding time. The longer the investment has been held the lower the tax rate, and if held for more

than 5 years many countries exempt the gains from taxation all together. This makes capital gains taxation in Sweden rather high despite a seemingly modest rate. As capital is highly mobile and can easily be "hidden" in tax havens, increasing this rate is not an option. If anything, it is more likely that this rate will need to be lowered in order to retain capital in Sweden.

Finally, a declining number of European countries tax wealth. Sweden was one of those countries until 2007 when the net wealth tax was abolished. While the property tax reform was mainly driven by political reasons and disliked by economists, the abolition of the net wealth tax was difficult to implement politically but welcomed by most economists who perceived the tax to be costly as it drove capital out of Sweden and led to extensive tax planning and tax evasion. The tax never generated much revenue (less than 1% of total tax revenues) and, hence, had little impact on the public budget.

To sum up, it is not realistic to expect that tax rates on capital will increase. If anything, they are likely to decline. The only capital tax that has potential to be raised without large welfare costs is the property tax. Politically it may be difficult to find the support for increasing property taxes, and it is unlikely that the potential revenues obtained from an increase in property tax would benefit the elderly. Perhaps a more realistic alternative is to expand the tax base, which will be discussed in the following section.

3.3.2 Increasing the Tax Base: A Partial Solution

An alternative, and possibly more promising, way to generate more revenue is to increase the tax base. As the main share of the revenues comes from labour income, I will begin by discussing the potential for increasing the personal income tax base. Table 3.3 lists a number of ways to do this and their potential effects on tax revenues and GDP, which will be discussed below.

Table 3.3 Ways to increase the tax base and their consequences on that tax base and welfare

	Effect on net tax revenues	Effect on GDP
Decreasing sickness leave and other kinds of leave from work	+	+
Decreasing unemployment	+	+
Reducing black market activity	+	+
Reducing time spent on home production	+	+
Increasing immigration	+?	+?
Postponing retirement	+	+
Graduating faster and at an earlier age(starting younger and finishing sooner)	+	+
Increasing productivity	?	+

3.3.2.1 Increasing the Tax Base on the Labour Side

The labour income tax base can be expanded by increasing the number of hours worked in the economy or by increasing productivity. Any measures taken to stimulate work and work effort are vital for the tax base and hence the amount of tax revenue the government can extract.

Even if Sweden, compared to many other countries, has large labour force participation and cannot expand the tax base by increasing female labour supply to the same extent as other countries, there is still a great potential for increasing the number of hours worked in the Swedish economy. Table 3.4 shows the breakdown of the 52 weeks in a year into weeks worked, weeks used for holidays and weeks spent on other types of leave, respectively. As is evident from Table 3.4, Swedes work the least weeks. On average, Swedes work 36 weeks in a year, which is more than 10 weeks less than in the US and five weeks less than the average number of weeks worked for the countries reported in Table 3.4. It is not the number of weeks spent on vacation (6.9) that brings down the total annual weeks worked in Sweden but instead the inflated levels of absence from work due to sickness, maternity leave and other reasons compared to other countries.

Table 3.4 Breakdown of the year's 52 weeks into weeks worked and weeks used for holidays and other types of leave for full-time employees

	Annual weeks worked	Holiday & vacation weeks	Full-week absences due to non-holiday reasons	Part-week absences due to non-holiday reasons	Absence due to sickness & maternity leave
Austria	39.5	7.3	2.6	0.4	2.3
Belgium	40.3	7.1	2.2	0.5	2.0
Denmark	39.4	7.4	2.2	1.0	1.9
Finland	38.9	7.1	2.4	1.5	2.1
France	40.7	7.0	2.0	0.4	1.8
Germany	40.6	7.8	1.8	0.3	1.5
Greece	44.6	6.7	0.3	0.2	0.2
Hungary	43.9	6.3	0.9	0.1	0.8
Ireland	43.9	5.7	1.2	0.2	0.9
Italy	41.1	7.9	1.7	0.3	0.9
Luxembourg	41.9	7.5	1.3	0.1	1.1
Netherlands	39.6	7.6	2.0	0.8	2.0
Norway	37.0	6.5	4.0	1.1	3.5
Poland	43.5	6.2	1.2	0.3	0.9
Portugal	41.9	7.3	1.4	0.2	1.2
Spain	42.1	7.0	1.3	0.4	1.2
Sweden	*36.0*	*6.9*	*3.8*	*1.7*	*3.7*
Switzerland	42.6	6.1	1.5	0.7	1.1
UK	40.8	6.6	1.5	1.5	1.6
US	46.2	3.9	0.9		1.0
Average	41.2	6.8	1.8	0.6	1.6

Source: Alesina et al. (2005)

Table 3.5 Share of full-time employees absent from work

	2005	2006
Average hours worked by employed individuals		
Contracted	37.5	37.5
Actually worked	29.6	29.5
Share of employed individuals absent from work		
Whole week	17.0	16.8
Part of the week	16.1	17.7

Source: SCB (2007)

Table 3.5 shows how often Swedes are absent from work. The first row presents the number of hours full-time employees by agreement are supposed to work, namely 37.5 h. The row below presents the number of hours that are actually worked per week, 29.6 and 29.5 h per week for 2005 and 2006 respectively. According to these numbers Swedes are absent from work for more than 20% of the hours that they are supposed to work. Approximately 17% of all employed individuals are absent from work a whole week and more than 16% of employees are absent for part of the week. Taken together, more than a third of all employed individuals are absent from work at least for part of the week. Hence, there is ample opportunity to increase the number of hours worked in the economy by increasing the number of weeks worked among those that have employment.

Moreover, as many individuals are unemployed there is potential for further increasing the hours worked in the Swedish economy. Currently, Sweden has a fairly modest official unemployment rate compared to many other European countries, but the unemployment rate is still high among certain groups (e.g., young individuals with foreign background). Lowering unemployment rates further is essential as it not only would generate more revenue but also cut public spending.

In addition, it has been questioned whether the official unemployment statistics underreport "real" unemployment. Previously, students looking for employment were not considered unemployed in Sweden. Failing to incorporate them has been estimated as an underreporting of unemployment by more than 2% (Herin et al. 2006). Today the method for calculating unemployment in Sweden corresponds to that used in Europe and therefore includes students searching for employment. In addition and as in most countries, those who are unemployed but participating in labour market programs are per definition not considered unemployed. However, as Sweden has relatively extensive labour market programs, this manner of reporting may underreport "real" unemployment to a larger degree in Sweden that in many other countries. Figures presented by Forslund and Krueger (2006) indicate that if individuals that participate in labour market activities are counted as unemployed the unemployment rates increase by as much as 5 percentage points (for example, from 8 to 13% in 1993). Moreover, many have argued that a substantial part of those who retire early or are on long-term sick leave instead are disguised unemployed. Edling (2005) estimates the number of individuals that are disguised unemployed by assuming that health is constant across different municipalities and that those in excess are instead disguised unemployed. Ljungqvist and Sargent

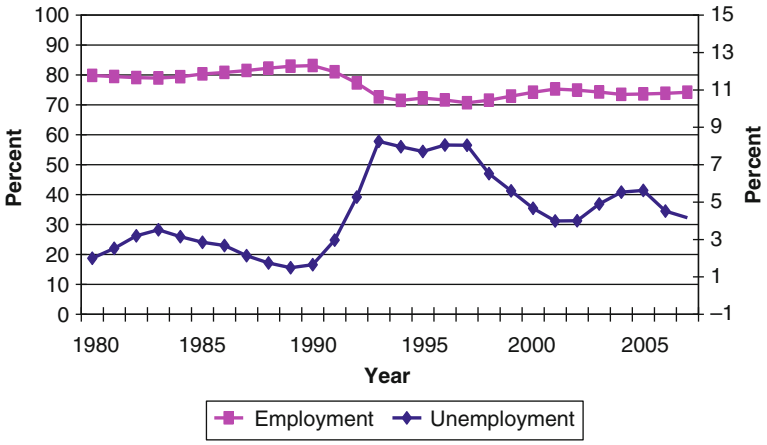

Fig. 3.5 Percent of employed individuals in the working-age population and the percent unemployed in the labour force, 1980–2007
Source: OECD (2006)

(2006) follow a similar approach, but instead assume that the share of those on long-term sick leave or who have gone into early retirement has not changed since 1975; anything above that level is disguised unemployment. Interestingly, both Edling (2005) and Ljungqvist and Sargent (2006) end up with similar unemployment rates of around 17–18%.

Identifying real levels of unemployment is obviously difficult and any figure should be interpreted with care, but comparing the rate of employment and unemployment as presented in Fig. 3.5 shows that there is a large discrepancy between unemployment rates and employment rates. Unemployment increased dramatically in the early 1990s with a corresponding drop in employment. The unemployment rate, however, has fallen since the late 1990s but without corresponding increases in employment, suggesting that the unemployed have not left unemployment for jobs (instead maybe for early retirement or long-term sickness leave).

Another substantial possibility for Sweden to increase its tax base is by reducing black market activities in the economy. The tax authority in Sweden estimates that 10% of the total income earned or 5% of GDP is generated on the black market (SOU 2006, p. 4). If a large part of this income could be subject to income taxes and social security contributions it would clearly have a positive effect on the tax revenues collected in the economy.

Several measures have been taken internationally and more recently also in Sweden to encourage work and to reduce black market activities. For instance, several countries have introduced earned income tax credit (EITC) programs in order to stimulate work effort at the lower end of the income distribution. The US introduced the EITC in 1975 and several countries have followed in Europe (e.g. the UK, Germany and Denmark). Sweden has recently introduced an EITC. Compared to many other countries with an EITC, the credit in Sweden is not primarily

directed towards the poor but to taxpayers throughout the income distribution, making the credit fairly expensive. It is too early to estimate the impact of the EITC in Sweden, but assessments from, for example, the US indicate that the EITC has affected labour supply positively.

Other measures taken by especially the Nordic countries (Denmark, Finland but also France) are reforms aimed at stimulating work by subsidising market-purchased household services. The subsidy is intended to make it affordable for individuals to hire someone to perform household tasks that can then free up time for work or leisure. The subsidy will effect the hours worked in the economy by increasing the labour supplied by those taking advantage of the subsidy and hiring somebody, increasing the demand for labour and turning black jobs into taxed white jobs. It is estimated that the reform in Sweden will increase each individual's labour supply with 4 h per year or increase employment by between 0.07 and 0.46% (Öberg 2005). The major part, 61%, would come from reduced black market activity, 21% from a reduction in time not worked, and 18% from reduced home-production (Öberg 2005).

Immigration is often mentioned as a solution. According to estimates from Statistics Sweden the sole reason there will be a net increase in the number of individuals in the working-age population (between 20 and 64 years of age) in the period 2010–2020 is due to immigration. Without immigration the working-age population will actually shrink (SCB 2003). Of the immigrants the majority come from countries outside the EU, and this is expected to remain the case (SOU 2004, p. 19). Unfortunately, in this group the employment prospects are lower than for the average Swedish-born individual and consequently the unemployment rates are much higher within this group (SOU 2004, p. 19).[6] If immigration is going to have a net positive effect on the public budget employment opportunities for the immigrants must increase (see, Chap. 2, for a further discussion about immigration).

Other ways to increase the number of hours worked in the economy is to postpone the retirement age. There is no fixed retirement age in Sweden; an individual can choose to collect retirement benefits anytime after the age of 61. As opposed to many other publicly provided benefits, the pension system is contribution rather that benefit based. Thus, an individual who chooses to retire early receives lower benefits than an individual retiring later (all else remains the same) (see, Chap. 4 for a detailed discussion about the Swedish pension system). The pension system is already designed to encourage individuals to work and compared to many other European countries Swedes retire late. Nevertheless, as we live longer and are generally healthier, penalising early retirement and encouraging postponement of the retirement age further would have positive effects on the public budget. The occupational pension system may, however, encourage early retirement, especially among the educated and well paid, and pose a problem.

In addition, in an international perspective Swedes tend to be quite old when they enter the labour market after completing their higher education. The median

[6]In 2002, 80.9% of the Swedish-born population between 20 and 64 were employed. The corresponding figure for the foreign-born population was 62.7% (SOU 2004, p. 19).

age for starting higher education is a little over 18 in Belgium, France and Ireland (SCB 2005). In Sweden, the median beginner is 23 years old, and more than 30% of first-year students are above the age of 30 (SCB 2005). Encouraging students to complete their education at a faster rate will increase the hours worked in the economy. Moreover, if the quality of the education is improved and students graduate younger the tax base can expand further.

In short, there is substantial room to increase the tax base by actual hours worked in the Swedish economy. For instance, by increasing employment among especially the young and foreign-born population and by reducing the number of hours that those who work are absent from work due to sickness, the amount of tax revenue available for other purposes can be increased substantially. Measures have been taken to reduce sick leave by tightening the sick leave benefits. Measures have also been taken to increase the demand and supply of labour by reducing social security contributions for different regions, certain groups and the young. Another important, and maybe more difficult, challenge to navigate is the reduction of black market activities. Reducing the black market is not only important for increasing the tax base but also for maintaining a high tax morale and general support for a high tax system.

Increasing Productivity

Increasing productivity is another means of generating economic growth and potentially increasing the tax base. Productivity growth has undoubtedly played an important role in achieving economic growth and welfare. Between 1970 and 2002 the hours worked in the Swedish economy declined despite the fact that the number of persons of working age increased by 10% (LU 2003/04). During the same period, GDP per capita grew by almost 90%, and, hence, the productivity growth made up more than the whole growth in GDP per capita. Thus, can increased productivity boost the tax base enough to generate the extra revenue needed to meet the demand from the elderly? This argument is often put forth and increased productivity will improve our welfare but may not necessarily result in more resources for the public sector. The reason for this is that the public sector is labour intensive and a large share of the total public expenditures constitutes wage costs. If the wages in the public sector follow those in the private sector (as wages in the public sector need to do to be able to attract labour) where productivity increases allow higher wages, the increased wage costs in the public sector may actually raise the total costs for the public sector (Baumol's disease).

In addition, many public transfers are wage indexed, such as pensions, and will follow the productivity growth in the private sector, increasing the cost of these transfers. Hence, productivity increases may not necessarily lead to increased resources for publicly provided welfare but are nevertheless desirable as they increase households' ability to finance welfare services privately.

Typically, it is assumed that it is harder to take advantage of productivity increases in the public sector than in the private sector as the public sector is labour

intensive. This does not imply that it is impossible for the public sector to become more productive. The fact that there are cost differences between different municipalities in Sweden suggests that there is room for increased productivity. In addition, it is important that the public sector utilises the advantages the integration process provides and opens up for not only national but also for international competition among providers. This will likely increase efficiency and reduce costs.

3.3.2.2 Increasing the Tax Base on the Capital Side

Increasing the capital tax base will affect the tax base and, to a lesser extent, the amount of tax revenue generated as the share of revenue stemming from capital taxation is relatively small. Being a high-tax country like Sweden, the challenge may be to retain our capital tax base instead of expanding it. As our capital taxes tend to be high compared to other countries and capital is highly mobile, we may continue to lose capital if our rates do not adjust downwards. The tax authority has, for example, estimated that between 250 and 500 billion SEK are invested abroad (Skatteverket 2006). The tax revenue this money would have generated had the it been retained in Sweden instead and subject to capital and wealth taxation is estimated to be between 7 and 8 billion SEK or 0.5 to 0.6% of total tax revenues (Skatteverket 2006).

Much of the tax competition literature is based on the assumption that countries compete by lowering tax rates or/and by supplying an attractive public good mix (e.g., well functioning infrastructure and R&D) to attract mobile production factors. Although Sweden never will be able to compete with low-cost countries in Asia, Sweden has many features attractive to foreign direct investment (FDI), such as a well functioning infrastructure, well developed IT technology, large R&D expenditures, and a well educated labour force making Sweden competitive within Europe. Lowering the corporate tax rate would probably not turn Sweden into the "New Ireland" but would most likely not lead to declining corporate tax revenues. The same probably holds true for the other capital taxes as well.

3.4 Discussion and Conclusions

Sweden, like many other countries, faces future challenges from an aging population and increased tax competition. When it comes to the demographic challenge, Sweden is in many regards ahead of the rest who will have to find ways to finance an aging population likely by increasing taxes. This may have a dampening effect on tax competition in the near future. Even if Swedes in general are supportive of a generous taxed-financed welfare state it is questionable whether Sweden can increase taxes in order to meet future demand from the elderly by increasing taxes. A more realistic scenario is to increase the tax base. Even if additional tax revenues can be extracted by increasing the number of hours worked in the economy it is uncertain if these additional revenues will benefit the elderly. With deepened integration it is likely to become increasingly hard to redistribute publicly

in the future, not only between rich and poor but also between different cohorts – such as redistribution between those working and the retired. Even if welfare driven mobility is not widespread so far, there are incentives for net contributors to move out of a jurisdiction with high levels of intergenerational transfers and for net beneficiaries to move in. For instance, in a global world with mobile tax bases, redistribution to the elderly or pension payments based on a pay-as-you-go system will be difficult to finance as those paying have incentives to relocate to jurisdictions with lower pension payments (funded systems) and those close to retirement age have incentives to move to a jurisdiction with generous pension benefits based on a pay-as-you-go principle.[7] To overcome this problem, many countries have moved to a contributions-based pay-as-you-go system where pension size depends on contributions, and where amounts can be carried over between countries. In order not to hinder mobility, pension benefits and other benefits earned in one country need to be permitted to be carried with individuals changing jurisdictions. For other social insurances benefits, however, the link between contributions and amounts collected is weaker.

Due to integration and the demographic development the public sector will likely undergo major reconstruction over the next few decades, both concerning its activities as well as its financing. The demand for many of the goods and services currently provided by the government will likely increase, not only due to increased demand from the elderly but also from other groups in society (for instance spending on education and healthcare for the non-elderly). Clearly, resources are needed to increase spending on these activities. It is, however, unrealistic to expect that they will come solely from the public budget. The extent of government involvement in the economy will likely have to lessen because the cost of providing these goods and services publicly will increase with globalisation as tax bases become increasingly mobile. Justifying an expansion of government involvement would require that the benefits from the expansion increase accordingly. For some government activities this may be the case, but not for others. It is, however, important that activities which are more suitable to being provided by the government remain in the public sector's regime while other activities that are not public goods or give rise to substantial externalities will have to be moved to the private sphere.

As stated before, there are economic arguments for providing social insurance publicly. One argument is moral hazard,[8] where individuals change behaviour to their private benefit after signing an insurance contract. When it comes to social insurances directed towards the elderly, moral hazard is probably less of a problem as benefits are tied to age, which itself is difficult to change as opposed to whether one becomes poor or not. Adverse selection, a second argument for public

[7]Wildasin (1999), for instance, showed that an individual can gain an additional 15% or more of her/his lifetime wealth by moving from one public pension program to another, given that the benefits are not contributions-based.

[8]The moral hazard problem is not resolved by social insurance but private insurance may fail to materialise altogether with extensive moral hazard.

involvement, is problematic as those that expect to live longer have greater incentives to sign up for pension insurance than those that expect to die young. To mitigate this problem, private insurance can tie pension benefits to life insurance as adverse selection goes in opposite directions for the two. This should render insurance less costly and provide incentives for private agents to operate on the market. The third argument for publicly provided insurance, the free rider problem, can be dealt with by instituting mandatory minimum payments (forced savings) for pensions and other old-age expenditures into private accounts. Anything above and beyond that will be voluntarily. The government will still have to provide a minimum amount but the total expenditure can be cut drastically.

The arguments supporting publicly provided social insurance for the elderly may consequently be weaker than for other types of social insurances (e.g., poverty). As any changes to the current system will have to be implemented over time to give individuals time to adjust to new circumstances, new solutions should be discussed and realised with some degree of urgency. Given that 80% of public redistribution in Sweden is estimated to be redistributed back to the same individual either in the same year or later in their life (Pettersson and Pettersson 2003), there should be plenty of room for private alternatives to establish over time. A likely future scenario is that the public sector provides a safety net guaranteeing some basic level of security. Anything above and beyond that will have to be provided privately, for example by individual accounts for pensions, social care and medical care, or through employment-based insurance. These accounts should be globally transferable to enhance mobility across jurisdictions and, moreover, not discourage work or effort.

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Chapter 4
A Stable Pension System: The Eighth Wonder

Agneta Kruse

Abstract Ageing, with increases in the old-age dependency ratio, puts a strain on pension systems organised as a pay-as-you-go system. The major part of the Swedish pension system is a pay-as-you-go one, but the specific Swedish design mitigates much of this strain. It is maintained to be financially stable. The question asked in this chapter is whether the system will be politically as well as financially stable in the future. The design is described and analysed with respect to sustainability. Political sustainability is analysed from the viewpoint of fairness, assuming that a fair system will be more stable than a system that is perceived not to be fair. The analysis of fairness is divided into fair outcome and fair procedure. Outcome varies much with chosen measure. The procedure has it draw-backs, but seems fair enough provided a well-functioning labour market.

4.1 Introduction

There is a vast literature reporting on the unsustainability of the pension systems in the industrialised world. The pay-as-you-go systems, i.e. unfunded systems where today's workers' contributions are used for benefits for today's pensioners, are put under strain when the number of workers in relation to the number of pensioners decreases. Due to ageing populations either the benefits will have to be lowered, the contribution rate (the tax) increased or a combination of both implemented; the changes are predicted to go far beyond what is supposedly acceptable. Thus, reform proposals are innumerable. However, it has also been shown that in a democracy (with majority voting) it will be difficult, if not impossible, to gain support for reforms (see Sinn and Uebelmesser 2002, among others). In fact, we have seen

A. Kruse
Centre for Economic Demography and Department of Economics, School of Economics and Management, Lund University, Tycho Brahes väg 1, 223 63 Lund, Sweden
e-mail: agneta.kruse@nek.lu.se

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fierce resistance to reform proposals in, for example, France, Italy and Spain, although more or less radical reforms have been implemented despite this. In Sweden a radical reform was decided in 1994 and implemented in 1999.[1] According to a Government Report (July 2005, p. 4), "[. . .], a pension system that is both politically and financially sustainable in the long term is already in place." Can the system be argued to present such ingenuity that it does the trick and solves the problems foreseen in the alarm reports? The purpose of this chapter is to discuss these different ways of funding pension costs and to give an assessment of possible political strain to come. The chapter begins with an outline of Swedish pension history, followed by an illustration of how demography influences a pay-as you-go system, using Swedish data. Next, the Swedish pension system is described, a description which is then used to assess financial and political sustainability in Sects. 4.5 and 4.6. Section 4.7 concludes.

4.2 The Swedish Pension History

Four dates contain more or less the entire Swedish pension history: 1913, 1946, 1960 and 1994. Its history can be described as a circle; it starts with a defined-contribution, funded system, makes a detour over defined-benefit, pay-as-you-go systems and then largely comes full-circle, back to the current defined-contribution systems, albeit mainly unfunded, i.e. pay-as-you-go.

When the first public pension was introduced in Sweden in 1913, it was so in response to a heavily ageing population during the latter part of the nineteenth century. The population ageing was caused primarily by decreases in the fertility rate, but also by substantial emigration that left a large number of old people without supporting relatives. The municipalities, responsible for poverty relief for those without relatives or own means, were far too small to constitute an efficient insurer.

The 1913 pension insurance was a general one in that it covered the whole population. It consisted of a defined-contribution funded part supplemented by a small means-tested defined-benefit part. The first part had an actuarial design; for example women received a lower pension for the same contributions due to their expected longer lifespan compared to men. The pension system of 1913 suffered from the problem often ascribed to funded systems: it takes a lifetime to build the system and get "reasonable" pensions from it. Thus, in the 1930s the pension benefit was still less than 20% of an average wage (Kruse 1994). In 1946, the system was abolished and replaced by a basic pension (*folkpension*) with equal benefits for all, and on a pure pay-as-you-go basis. In the years to come, large groups in the labour market supplemented the basic pension with negotiated occupational pension. Most

[1]There is research suggesting that the Swedish reform was possible to implement – it got an implicit majority – thanks to transition rules (Kruse 2005; Selén and Ståhlberg 2007). See also section 4.6 for a description of these rules.

white-collar workers were covered; however, blue-collar workers did not include pensions in their negotiations. Therefore, a majority of the working population only had their basic pension to live off as pensioners.

In the 1950s, pension commissions were tasked with investigating how a system where the standard of living was sustained into retirement could be arranged. The result was the ATP-system introduced in 1960. It supplemented the flat rate basic pension and was a defined-benefit, pay-as-you-go, price-indexed system where the benefit was determined as a percentage of the average of a person's 15 highest paid years. Thirty years of contributions were enough for a full pension; fewer years of contributions reduced the benefit with 1/30 for each missing year, additional years of contributions did not increase the benefit. There was a floor and a ceiling on benefits, but not on contributions. The price index meant that the distribution between co-living generations was determined by the growth rate in the economy; with a high growth rate, the pensioners' standard of living was lagging behind that of the working generation, and vice versa. The defined-benefit feature meant that the contribution rate had to be adjusted in response to forecasted economic and demographic changes (see for example Kruse 1994, 2005).

These features taken together made the ATP-system both unsustainable and unfair, both between and within generations. Furthermore, the 15- and 30-year rules, apart from redistributing from workers with many years in the labour market and flat life earnings profiles (usually blue-collar workers) to people with fewer working years and steeper earnings profiles (white-collar workers), subsidised leisure, which undermines a pay-as-you-go system.

Again, a number of pension commissions were put to work; in 1994 the current system was passed in the Swedish parliament and was launched in 1999. It consists of two parts, both defined-contributions with individual accounts. One part consists of notional accounts, i.e. a pay-as-you-go part, which has become known as a Notional Defined Contribution system (NDC), and the other part of real accounts, i.e. a funded part. The idea was to establish a tight connection between the individual's contributions and benefits; the "perverse" redistribution in the old system would thus be remedied as would the subsidising of leisure. However, the tight connection has its breaks, as we shall see in Sect. 4.6. In addition to these two defined-contribution parts there is a guarantee pension. The guarantee pension replaces the basic pension; it is a defined-benefit, price-indexed pension and the benefit is income-tested against the pension benefits from the two other systems.

Along with the public pension system there are occupational pensions. There are four major systems covering ∼90% of the Swedish labour force. These systems used to have a defined-benefit design but as a result of the reform of the public system, they have started converging towards defined-contribution systems as well. As we shall see in Sect. 4.6.1, occupational pensions are more important for high-income earners than for low-income earners as they replace more of the income above the ceiling in the public system.

As one purpose of this chapter is to discuss the political sustainability of the new system, it is noteworthy that, in all cases but one, the pension systems have been passed largely by unanimity in the parliament. The exception is the ATP-system,

which was preceded by a fierce political fight and a referendum and was then finally passed with a majority of only one vote. The design of today's system is a result of an agreement between five out of seven parties in the parliament, constituting a majority of 85%. According to the quote from the government report mentioned in the introduction of this chapter, the system is sustainable. The task here is to discuss possible pitfalls.

4.3 Ageing and Pensions

There is no doubt that ageing puts a strain on pension systems organised as pay-as-you-go systems. This can easily be shown by using the budget restriction of a pay-as-you-go system and combining it with demography. In Table 4.1, this is done applying historic and forecasted demographic changes in Sweden to the budget restriction of a 'pure' pay-as-you-go system. In such a system the contributions of the workers in a given year are used for disbursement of benefits to contemporary pensioners in that same year, which can be expressed as:

$$q\ w\ L = b\ R \tag{4.1}$$

where q is contribution rate, w average wage, L labour force, b average benefit and R number of pensioners. (w L) is the wage sum, i.e. the 'tax' base; thus the left side of the equation is the sum of contributions and the right side the sum of disbursements. The equality sign has to hold in order not to run a surplus or a deficit. Rearranging (4.1) gives

$$q = b/w\ R/L \tag{4.2}$$

that is, the contribution rate has to equal the replacement rate (b/w) times the old age dependency ratio (R/L). Changing demography (R/L) forces either the replacement rate or the contribution rate to be adjusted in order to keep the budget restriction. The degree of the adjustment needed is shown in Table 4.1.

Table 4.1 Replacement rate or contribution rate in a pay-as-you-go system at different old-age dependency ratios

	Replacement rate at a given contribution rate; and contribution rate at a given replacement rate, with dependency ratio defined as R/L			Replacement rate at a given contribution rate; and contribution rate at a given replacement rate, with effective dependency ratio R/E		
	R/L	b/w if q = 18.5%	q if b/w = 0.6	R/E	b/w if q = 18.5%	q if b/w = 0.6
1960	0.20	0.93	0.120	0.26	0.71	0.156
2010	0.32	0.58	0.192	0.40	0.46	0.240
2030	0.42	0.44	0.252	0.53	0.35	0.318
2050	0.44	0.42	0.264	0.54	0.34	0.324

Source: Statistics Sweden BE0101, BE0104

Using 'pure' demography in the old-age replacement rate, i.e. the number of persons aged 65 and older in relation to the number of persons aged between 20 and 64, R/L, the replacement rate, b/w, will decrease from 58% in 2010 to just above 40% in 2050 given a contribution rate of 18.5%, which is the contribution rate in the Swedish public system. However, everyone between the age of 20 and 64 does not work. In a pension system, the 'L' that is of importance is of course the actual amount of labour, determined by the number of workers and the number of hours worked per week, the number of weeks per year and the number of years over a lifetime. By deducting a hypothetical number of people in the age group 20–64 supported by social insurance, we get the effective old-age dependency ratio R/E.[2] In this case the replacement rate is 46% in 2010 and decreases to approximately one third in 2050, given a contribution rate of 18.5%.

Table 4.1 illustrates the strain an ageing population puts on a pay-as-you-go system. Despite this forecasted demographic development and its effect on the benefit level, the Swedish pension system is said to be both financially and politically stable.

4.4 Pensions in Sweden: A 4-tier System[3]

As described in Sect. 4.2, the new public system consists of three tiers, the *guarantee pension*, and two defined-contribution parts. These are termed *inkomstpension* and *premium pension*. In Fig. 4.1 (see Sect. 4.6.1.1), the benefits from these different parts are shown. The fourth tier consists of the occupational systems.

In the public system, the contribution rate is set at 18.5% of the pension-qualifying income. Contributions are paid on all earnings in all years in the labour market.[4] All individuals have two personal accounts, one for each of the two parts. The contribution rate of 18.5% is divided between the two parts; 16 out of the 18.5% go into the *inkomstpension*, the notional defined-contribution system (NDC) which is a pay-as-you-go system. This account is indexed by the growth rate in average wages. Regarding the second part, the *premium pension*, with 2.5% of the 18.5% contribution rate, real money goes into the personal account. The individual can choose among more than 800 funds in which to invest the money. The rate of return on the funded part is determined by the rate of return on the chosen funds. There is a ceiling on the income qualifying for pension credits; the ceiling is at 7.5

[2]SOU 2006, p. 86 shows that the number of individuals being supported by sickness insurance, unemployment insurance and disability insurance has increased from around 11% in 1970 to 21% in 2005. E in Table 4.1 is calculated based on the assumption that 20% have been and will be supported by these systems.

[3]For a fuller description of the Swedish system, see Kruse and Palmer (2007).

[4]There are a couple of minor exceptions. Full contribution is not paid on incomes below 42.3% of one price-related base amount and not on incomes above the ceiling (7.5 price-related base amounts). These incomes do not give pension credits.

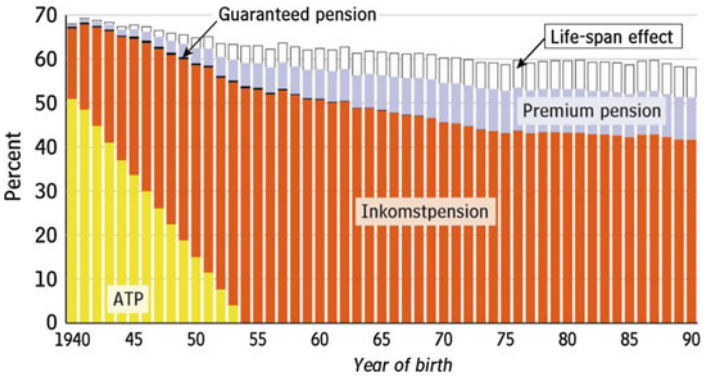

Fig. 4.1 Pension at the age of 65 in relation to income in age groups 16–64 for different birth cohorts
Source: Swedish Social Insurance Board (2005:47)

income base amounts[5] (45,900 SEK in 2007). Half the contribution rate is levied on income above the ceiling as a tax on high-income earners.

The personal accounts grow each year with new contributions plus the rate of return/the interest on the account. Inheritance gains are also credited to the accounts; the pension balances of deceased people are distributed to those belonging to the same cohort as the deceased. In addition to this, the accounts are credited with so-called pension-qualifying amounts for sickness and disability insurance, unemployment insurance and remuneration from parental leave. Non-contributory amounts are also credited for child years, military service and higher education. At the date of retirement the individual has a pension wealth in the two accounts, a wealth determined by the sum of deposited amounts plus compound interest.

Benefits from the NDC system are determined by dividing the pension balance at the date of retirement with an annuity divisor. The annuity divisor is determined for each cohort by the expected remaining lifetime estimated at the date of retirement and an added interest factor of 1.6%. Unisex life expectancy tables are used for calculating expected remaining lifetime. The interest factor makes the divisor smaller than the expected remaining lifetime and causes a forward shifting of consumption possibilities. Outgoing benefits are indexed by the growth rate in average wages minus the 1.6% that already have been received.

In the funded part, the individual can choose between claiming the annuity either as unit-linked insurance or as traditional insurance. If unit-linked insurance is chosen, the savings of the insured remain in the chosen funds and the size of the premium pension is re-valued once a year based on the value of the fund shares in December. Each month the following year, a sufficient number of fund shares are

[5]The income base amount is changed once a year in response to changes in the income index.

sold to finance the pension benefit. If a traditional insurance is chosen, the pension is calculated as a guaranteed life-long annuity.

The *guarantee pension* (GP) is income-tested against benefits from the other two parts of the public pension system and is financed by general tax revenues in the state budget. As said before, this system is defined-benefit and price-indexed and determined in the following way:

If own pension $\leq$ 1.26 price base amounts (pba),[6] then
GP = 2.13 pba – own pension.

If own pension $>$ 1.26 pba, then
GP = 0.87 pba – 0.48 (own pension – 1.26 pba).

This gives a marginal effect of 100% up to own pension of 1.26 pba, and a marginal effect of 52% in the interval 1.26–2.13. Thus, in the lower range of the income scale the system gives no or only a weak incentive for work and hence "the tight connection between benefits and contributions" does not exist. Pensioners with guarantee pension are also eligible for housing allowances, paying at most around 90% of the rent.

There is no statutory retirement age in the Swedish public system. An individual can begin to draw pension from the age of 61. This of course means that the annuity divisor increases accordingly. The individual can choose to draw full pension or only part of a full pension and continue to work. If so, the pension wealth decreases with outgoing benefits and increases with new contributions. The guarantee pension, however, can not be drawn before the age of 65, and if an individual eligible for guarantee pension withdraws before the age of 65 – thus reducing the benefits from the other parts of the public system – her/his benefit from the guarantee system will be calculated as if the individual would keep on working until the age of 65.

Pension systems are long-running commitments. Abrupt changes cause problems as there will be many who do not have the possibility of adapting to new rules or have a very limited time in which to do so. Transitional rules were used to mitigate the change to the new system. People born in 1937 and earlier (57 years of age and older at the time of the reform decision) belong entirely to the old system, those born between 1938 and 1953 belong partly to the old and partly to the new system, while those born in 1954 or later belong entirely to the new system. The transition period is divided into 20s; a person born in 1938 belongs to 19/20ths to the old system and to 1/20th to the new one; people born in 1944 belong to 10/20ths to each system; and those born in 1953 belong to 1/20th to the old system and to 19/20ths to the new system. However, indexing of outgoing benefits follows the new rules, that is, are all indexed by growth.

The forth tier consists of the *occupational pensions*. There are four main systems; one for blue-collar workers in the private sector, one for white-collar workers in the private sector, one for employees in local government and finally one

[6]The price base amount, pba, is used for price-indexing the benefits. It is adjusted once a year in response to inflation (consumer price index). In 2008 pba = 41,000 SEK; 1.26 = 51,660 SEK.

for state employees. The contribution rate varies between 2.5 and 4%. These systems are obligatory, i.e. the individual cannot choose not to join. All of them replace 10% of the income below the ceiling in the public system and all but the system for blue-collar workers in the private sector replace ~60% of the income above the ceiling. This makes the occupational pensions more important for high-income earners than for low-income earners.

In Sect. 4.6.1 estimates of the outcome from the various parts of the Swedish pension system will be shown for different birth cohorts, income groups and for men and women.

4.5 Financial Stability in the Swedish Pension System

The DC-feature in combination with the division number forces the system never to run into a deficit. Each individual receives a benefit determined by the (notional) pension wealth accumulated in her/his account, plus the benefit from the funded part. To arrive at the yearly benefit from the notional system, this pension wealth is divided by the number of years the wealth has to last, i.e. expected remaining lifetime (with the insurance feature to take advantage of the 'law of large numbers' and take care of the risk of an extraordinary long life). Thus, the sum of (expected) benefits never exceeds the sum of (expected) contributions plus compound interest. Also, the DC feature, the tight connection between contributions and benefits, rewards work and may induce people to work longer hours or retire later, thus alleviating at least part of the strain caused by an increasing dependency ratio.

However, there are a number of features in the system that may jeopardize stability. One is the index used: average wages instead of sum of wages, the latter being the contributions base. Another one is the method of calculating expected remaining lifetime. This is calculated for the cohort at the age 65. The increases in expected lifetime that come after that date are not accommodated for in the division number. Over the last decades life expectancy has on average increased by some 3 months per year. In a decade, that adds up to more than two additional years that have to be financed. To guarantee financial stability on an aggregate level, a balance sheet is constructed and financial stability is guaranteed by an automatic balance mechanism.

The financial balance sheet shows the assets and the liabilities of the system; these are embodied in the balance ratio, BR:

$$\text{BR} = (\text{capitalised value of contributions} + \text{buffer funds})/\text{pension liabilities}$$

Whenever an imbalance occurs the automatic balance mechanism is triggered. With $\text{BR} = 1$, assets equal liabilities and the system is in balance. With $\text{BR} < 1$, liabilities exceed assets and the automatic balance mechanism lowers the rate of return on pension accounts as well as on outgoing benefits, reducing pension liabilities until balance is restored.

Until the year 2007 the pension assets were greater than the pension liabilities, but the financial crises in 2008 caused a drop in the value of the buffer fund of

Table 4.2 The NDC balance sheet, in billion SEK

	2002	2004	2006	2008
Contribution asset	5,301	5,607	5,945	6,477
Buffer fund	488	646	858	707
Total assets	5,789	6,253	6,803	7,184
Pension liability	5,729	6,244	6,703	7,428
Surplus	60	9	100	−244
Balance ratio	1.0105	1.0014	1.0149	0.9672

Source: Swedish Social Insurance Agency (2008)

almost 30%. This caused BR to fall below 1 for the first time and thus triggers the automatic balance mechanism, see Table 4.2. Due to a lag in the mechanism of 2 years, pension benefits will be lowered in 2010. The effect on the income pension should have been −3.51% in 2010 and −4.01% in 2011.[7] Now, this reduction would come into effect in 2010 which also happens to be a year of election to the parliament. The political courage disappeared and a new balance mechanism was introduced. In the new one changes in the buffer fund is calculated as averages for a longer period, making financial crises live longer in the system (see Kruse 2009, for a critical note) Also, the reduction in pension benefits will be lower in 2010 with the new calculus, but larger in 2011 and 2012.

The design of the system, with balance sheets and an automatic balance mechanism, closes the system and makes it financially stable. It is also the basis for making the system autonomous, that is, outside the state budget.

4.6 Political Sustainability

Pensions are a long-running undertaking; people start paying contributions some 50, 60 or even 70 years before the last benefit is disbursed. To issue guarantees for such a timespan may seem unrealistic. However, a design that makes the system robust to political, economic and demographic risks and minimises adverse incentives and dead-weight losses has a greater potential for survival. In pay-as-you-go systems the economic growth gives the rate of return, while the rate of return in a funded system is the interest earned in the capital market. Neither can be guaranteed; a risk-reducing device is to divide the system between the two. This is done in the Swedish system with around 85% being pay-as-you-go and the rest being funded. What division would be an optimal one is beyond my power to judge, but using both reduces the risk. Also, indexing the pay-as-you-go system with the growth rate makes the working generation and contemporary pensioners share the fruits of good years and the strains of lean years, making the system more robust than if a price-index had been used. The DC-feature grants benefits for all

[7]Note, that the guarantee pension is price indexed and not subject for this change.

contributions, not distorting the choice between work and leisure, once again a risk-reducing device.

The major part of the Swedish system is a pay-as-you-go system. Such systems build on trust, trust between generations. The working generation paying contributions that are used for disbursement of benefits to contemporary pensioners does so in the hope that (being convinced) future generations will do the same when they are pensioners. A first prerequisite for this implicit social contract between generations to hold up is financial stability, discussed in the previous section. A second one is political sustainability.

There is a danger in pay-as-you-go systems; it has been shown – both theoretically and empirically – that pay-as-you-go systems tend to expand beyond an optimal (sustainable?) level (see Browning 1975, Sjoblom 1985, for theoretical results; Breyer and Craig 1997, for empirical results). There will always be a majority who prefers a higher level than the optimal one viewed from a life cycle perspective. This tendency is even reinforced with an ageing population. This finds its explanation in that when voting on the level, the older the electorate, the higher the level preferred; the older a person is, the longer the period of contributions has passed at the time of voting. Contributions already paid are thus sunk costs while the remaining period of contributions to be paid is shorter. Ageing also brings about an opposite tendency through the effect on the rate of return, which tends to decrease due to ageing. Therefore, ageing causes two effects which go in opposite directions. However, empirical studies find the expansive effect stronger than the retrenching one and such an expansion might threaten the system's sustainability.

The Swedish system is not exposed to this problem because the NDC feature protects it. An individual has nothing to gain from voting for an expansion. It will of course result in an increased benefit level but this will be fully paid for by the individual. In an NDC system there is no such thing as sunk costs. Also, the autonomy of the system guarantees that even if an expansion is launched the system is not threatened. In fact, the contrary may occur; an expansion (an increase in contribution rate) makes the guarantee pension – the part financed by the state budget – less important. A higher level of income pensions make fewer people eligible for guarantee pension.

It has also been shown that reforms retrenching the system are "impossible" to bring about in a democracy (see Sinn and Uebelmesser 2002; Cremer and Pestieau 2000). Evidently, this was not true for Sweden; it was possible to gain political support for the reform. Kruse (2005) and Selén and Ståhlberg (2007) credit the transitional rules for making the reform possible; according to their analysis the transitional rules made it possible to secure a majority in favour of the new system.[8] But will the system be sustainable in its fully-functioning state? The Swedish system is said to be politically stable due to the fact that a broad political majority agreed to the reform; five out of the seven parties in the Swedish parliament which

[8]Könberg et al. (2006) describe the political process and the different aspects taken into consideration during the work on the proposal.

represent some 85% of the MPs voted in favour of it. However, as new generations enter the stage, they also have to find the contract agreeable in order to be willing to maintain the system. In the following section sustainability will be discussed using the concept fairness, assuming that a fair system has a greater potential for survival.

4.6.1 Fairness as an Estimate of Sustainability

There are – at least – two definitions of fairness: a fair procedure and a fair outcome. The analysis here will follow these two lines. With equal opportunities, a fair procedure will result in a fair outcome.[9]

4.6.1.1 A Fair Outcome

One of the criteria against which to judge the sustainability of the pension system is if the system provides "adequate" pensions, if it provides a decent standard of living in old age. The notion 'a decent standard of living' is a relative one. Firstly, it depends on what the pension is supposed to be able to buy; so is for example health care and old age care heavily subsidized in Sweden. Secondly, what should the pension benefit be compared with? Own income before retirement, for example final salary? Or average income of contemporary workers? Different measures give different answers. Compare for example the outcome according to estimates by Swedish Social Insurance Board (Fig. 4.1) and the one by Flood (2004) (Table 4.4). In Table 4.4 pension benefits for the fairly recently retired (between the age of 66 and 69) are compared to their income in the years before retirement (between the age of 60 and 64). In Fig. 4.1, the average pension for a cohort is compared with the average wage of contemporary workers aged 16–64. The outcome is of course higher with the latter definition since wages are lower. Which one to use – or which one that depicts a fair outcome – depends on which one we think is closest to how people think of their pensions.

Figure 4.1 shows estimates of the outcome from various parts of the public system and for various birth cohorts. The ATP-part shows how the old system is phased out and the new one is introduced; the transitional rules are such that individuals belonging to the birth cohort of 1940 have 70% of their pension calculated in accordance with the old rules, and those born in 1953 have 95% calculated according to the new system. From the birth cohort of 1954 and onwards, people belong fully to the new system.

The figure also shows that the replacement rate will decrease in the future. People born in 1940 have a replacement rate of just below 70%, while people born in 1970 and later will have a replacement rate of around 55%. An explanation

[9]For a fuller discussion on the problems of measuring distribution, fairness, etc., see for example Bergh (2007), Roemer (2002).

Table 4.3 Pension benefit for different cohorts compared to pension benefit for those born in 1930, average life expectancy, age of retirement and effect on pension benefits

Cohort born in	Reaches 65 in	Life expectancy at 65(a)	Retirement age to neutralise life-expectancy effect on pensions(b)	Implying an expected length of retirement (a minus b)	Compared to those born in 1930
1930	1995	82 years, 5 months	65 years	17 years, 5 months	0
1940	2005	83 years, 7 months	65 years, 9 months	17 years, 10 months	+ 5 months
1950	2015	84 years, 10 months	66 years, 7 months	18 years, 3 months	+ 10 months
1960	2025	85 years, 7 months	67 years, 2 months	18 years, 5 months	+ 1 year
1970	2035	86 years, 3 months	67 years, 7 months	18 years, 8 months	+ 1 year, 3 months
1980	2045	86 years, 10 months	68 years	18 years, 10 months	+ 1 year, 5 months
1990	2055	87 years, 1 month	68 years, 2 months	18 years, 11 months	+ 1 year, 6 months

Source: Swedish Social Insurance Agency (2008)

to these decreases is that, due to increases in expected lifetime, the annuity divisor increases – from 15.7 for those born in 1940, to 17.0 if born in 1960, and to just above 18 for those born in 1990, causing a decrease in the benefit level. In Fig. 4.1, this is shown as "life-span effect", i.e. the reduction in benefits due to increased longevity. The lifespan effect is also shown in Table 4.3. An individual born in 1990 will receive a reduction in the benefit compared to older cohorts, if the person born in 1990 decides to retire at 65. However, the lifespan effect can be mitigated by postponing retirement, as shown in Table 4.3. If the individual born in 1990 postpones retirement to the age of 68 years and 2 months, the effect of increased longevity on the pension benefit compared to a person born in 1930 will be fully neutralised.

It can be concluded that if people accept to postpone retirement, benefits will not decrease due to increased longevity. Also, despite postponed retirement the number of years as a pensioner will increase. The new system offers a choice between consumption and leisure, something that must be appreciated as welfare enhancing.

The results in Fig. 4.1 are based on the assumptions in the basic or main scenario. In a pessimistic scenario the automatic balance mechanism is activated in 2013, leading to a reduction in pension benefits for younger generations. For the cohort born in 1990 the balancing reduces the pension level by 1.1 percentage points (including the increase in the guarantee pension caused by reduced benefits) (Swedish Social Insurance Agency 2007). However, in the pessimistic scenario wages will also be lower. As pensions follow the developments in the economy due to the chosen indexation, the replacement rate will be approximately the same as in the basic scenario.

Table 4.4 shows the total replacement rate from different income sources in relation to own income in the years before retirement. The outcome is shown for different income classes and for three cohorts. Those born in 1940 receive almost their entire pension from the old system; those born in 1950 receive the major part of their pension from the new system and those born in 1960 receive their entire pension from the new system. As can be seen in Table 4.4, when transitional rules have passed, people in the highest income brackets will only get a 27–29%

replacement rate from the public system, and another 22–24% from occupational pensions.

When fully functioning, i.e. for the cohort born in 1960, the outcome from the public system is estimated to give a replacement rate of 57% for those in the lowest income bracket, 44% for middle-income earners, and 29% for the 25% in the top income group. The "high" replacement rate in the lowest income bracket is of course due to guarantee pension, and the low replacement rate in the highest income bracket to the ceiling on pension qualifying income, i.e. to deliberate redistribution. Will these replacement rates be perceived as fair or acceptable outcomes? Evidently, the 'tight connection between contributions and benefits' in a DC system is not all that tight.

Women's labour market behaviour is different to men's; they use more time for caring for children and elderly parents and thus more often have interrupted working careers and more often work shorter hours in paid work. A DC pension system is therefore often argued to be disadvantageous to women. In Ståhlberg et al. (2005) this is analysed and Table 4.5 gives a comprised result of that analysis. In Table 4.5, the outcome for women is compared to that for men; other definitions of outcome than the ones used in Fig. 4.1 and Table 4.4 are used to shed light on the

Table 4.4 Replacement rate at age 65–69 in relation to average income during age 60–64 for different cohorts and income groups. Percentiles below 25, between 25 and 75, and above 75[a]

Cohort	Income group	Replacement rate	Of which *public pension*	Occupational benefit	Private pensions
1940	< p25	112	*84*	8	18
	p25 – p75	74	*54*	10	9
	> p75	67	*37*	17	11
1950	< p25	87	*63*	12	11
	p25–p75	68	*46*	13	7
	> p75	57	*27*	22	7
1960	< p25	79	*57*	13	7
	p25–p75	65	*44*	15	6
	> p75	59	*29*	24	5

[a]The result in Table 4.4 is derived by using a micro simulation model, SESIM, at the Swedish Ministry of Finance
Source: Flood (2004:25)

Table 4.5 Pension outcome for women with varying behaviour profiles in relation to a full career man

	Full career woman/Full career man	Full time/Part time woman/Full career man	10-year woman/ Full career man	Part-time woman/ Full career man
Annual own annuities	80–100	80[a]	35–40	60–70
Replacement rate	100–120	100–120	120–145	100–125
Rate of return	115–130	120[a]	310–400	120–130

Note: The first figure in the interval shows those with no upper secondary school education, the last figure those with postgraduate education
[a]The outcome is the same for all educational groups
Source: Ståhlberg et al. (2005)

problem of "a fair outcome". Three definitions of outcome are used: annual annuity; replacement rate, defined as pension benefit in relation to final salary; and rate of return, calculated as present value of expected lifetime benefits divided by present value of lifetime contributions. The table shows the outcome for women in five educational classes – from those with no upper secondary school education to those with postgraduate education – and with different labour market behaviour, and so on, compared to a man working full time throughout all his life. All women are assumed to have two children and to stay home with parental leave. Four types of careers are assumed: (1) the full-time career woman with the same behaviour as a man (apart from parental leave); (2) the full-time/part-time career woman who works full-time until the arrival of the children, then works part-time when the children are young and then returns to full-time work; (3) the woman who works for 10 years when young and does not return to the labour market after having children; (4) the part-time career woman who works part-time throughout most of her life.

It turns out that replacement rates are fairly similar between men and women; women have a slightly higher replacement rate due to the fact that men have higher wages and thus hit the ceiling in the public system more often than women do. Women get a higher rate of return but a lower personal annual benefit. The outcome for the "10-year-woman" shows the outcome for those with no or very low own income; it thus shows the result of the guarantee pension.

Table 4.5 serves as an excellent example of the difficulties in using outcome for judging adequacy or fairness of a pension system. The table draws attention to the wide range of outcome depending on the measure chosen. Emphasis on procedure may therefore help in judging.

4.6.1.2 A Fair Procedure

Using the fair procedure approach means that we take into account that people's preferences and choices influence the outcome. Assuming a fair distribution at the outset, the outcome depends on people's choices – what education is chosen, how much labour is supplied (hours and years), what effort is put into labour, among other things. If we consider adult people to be competent to make decisions, with a fair procedure the result must be considered fair.

A number of features summarize the procedure. These are the life-income principle; the level, i.e. the contribution rate; the exceptions to the life-income principle (the guarantee pension, the ceiling, benefits for children, for higher education and military service); the indexing by average wage during the earnings period; the adjustment indexing of outgoing benefits; the opportunity to choose between funds in the financial part; the annuity divisor with its specific method of including a longevity factor; and the use of unisex life-expectancy tables.

The defined contribution system builds on a life-income approach. All income earned in the labour market awards pensions rights. There is an (exact) correspondence between what the individual pays into the system (+interest) and the outgoing benefits, with yearly benefits determined by pension wealth in the accounts

distributed over the expected remaining lifetime. To the degree that the labour market gives rise to 'unfair' distribution of wages, so too does the pension system in the sense that low income yields a low pension benefit. However, it will not influence the rate of return.

4.6.2 A Fair Starting Point?

Women have lower incomes than men. This is mainly due to shorter working hours; women work part-time to a greater extent than men do. There is empirical evidence suggesting that women also have lower wages than men even if equal to men in all other relevant respects. After controlling for "objective" differences (education, work effort, job experience) there remains a difference in wages of about 5% that might be ascribed to discrimination. The lower wage, irrespective of cause, will generate a lower annual pension benefit (see Table 4.5). However, the two other measures used show that women fare better than men. Further, Ståhlberg et al. (2005) argue that using the pension system to compensate for a badly functioning labour market may be counter-productive; instead of alleviating the malfunction such compensation may justify and make permanent these differences.

We also know that people are born with different bodies and minds. Some are strong, intelligent, and healthy while others have not been so lucky in the lottery of life. When it comes to the risk of sickness, of disability and of unemployment, risks that are unevenly distributed, the risk is pooled in the insurance collective as benefits from unemployment insurance, sickness and disability insurance are counted as income; contributions are paid into the pension accounts on income from these sources.

4.6.3 When Contributions Deviate from Benefits, i.e. Deviations from the DC Feature

The guarantee pension gives benefits to those who have had low or no income during working years. There is no doubt that "the good society" protects its members against the risk of poverty in old age and that most people find such an arrangement fair. However, there are two problems in this context that deserve attention. The first one is its level and the high marginal effects it causes. The second one is the indexing with prices.

The lowest level of benefit a single person can receive is 7,150 SEK per month. This benefit is supplemented by housing allowances of roughly 3,000 SEK per month. The median income for men and women was 18 700 SEK in 2005. The guarantee pension including housing allowances is thus around 54% of the median income. Women's median income was 16,600 SEK; the guarantee pension is 61% of women's median income. Is this benefit too low? Or is it too high? It is worth mentioning that, according to Table 4.5, a person with only guarantee pension gets a

replacement rate far above that of a full career man. Furthermore, the guarantee pension awards almost equal benefits to a person who never worked and never paid contributions and a person who worked for many years in a low-income job. In the Swedish system – as is almost always the case with means-tested or income-tested benefits – there are high marginal effects in the lower part of the income scale.

The ceiling on benefits but not on contributions (half the contribution rate is paid on income above the ceiling) means that high income earners pay an extra tax and get a lower replacement rate as well as a lower rate of return than those with income below the ceiling, clearly shown in Table 4.4. Many more men than women have income above the ceiling; this explains part of the result in Table 4.5. The ceiling together with the guarantee pension provides the Swedish pension system with a middle class bias.

4.6.4 Indexing

Indexing the guarantee pension with prices implies that the relative standard of living of those who depend on that pension will fall behind that of the working generation as well as that of other pensioners with benefits from the other parts of the system. The yearly growth rate in the economy need not be high in order to cause a substantial wedge. People who receive disability pension in their early years of life are at risk of ending up with a very low standard of living as pensioners.

The NDC system is indexed by wages. This means that workers and pensioners share the same economic development, be it fat or lean years. This probably strengthens the system. However, indexing with average wages instead of the wage sum, which is the contribution base, increases the risk of activating the automatic balancing. This, in turn, implies a lower accrual rate and lower outgoing benefits, which might cause tension between co-living generations.

The benefits from the funded part may display substantial differences between individuals even if the contributions are the same. There are more than 700 funds to choose between, and the benefit will depend on the rate of return of the chosen funds. Today we can only speculate in possible reactions if the outcome proves to show considerable differences. Conclusions from research seem to suggest that women have a higher risk aversion but also that women seem to do just as well as men in their investments. People with less education are more conservative in their investments, and do not spread the risk as much as high-income earners (Ståhlberg 2006). These differences may give rise to differences in outcome.

Outgoing benefits are indexed by a so-called adjustment index. In the division number an interest of 1.6% is already credited to the benefit; this results in a forward shifting of consumption possibilities illustrated in Fig. 4.2. The two replacement rates represent the same sum of pension wealth. The downward sloping “60%” line illustrates the Swedish adjustment index.

People who live longer will end up with a lower benefit than would otherwise have been the case. Low pension benefits coincide with old age and a higher

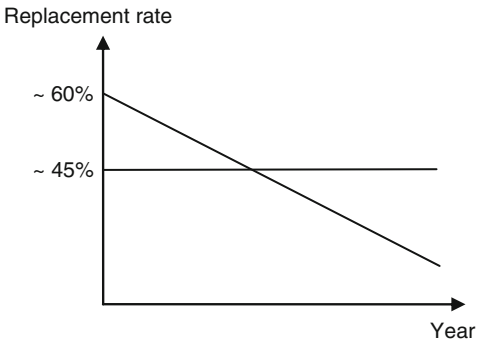

Fig. 4.2 A schematic illustration of outgoing benefits with front-loaded indexation compared to benefits without front-loading

demand for healthcare and old-age care. Will this benefit profile be considered fair to those who will pay taxes to finance healthcare and old-age care?

4.7 Concluding Comments

The major part of the Swedish pension system is a pay-as-you-go one. Such systems will have sustainability problems due to the predicted ageing population with increases in the old-age dependency ratio. The specific Swedish design mitigates much of this strain.

The indexation with average wage takes care of (most of) the economic changes. The annuity divisor takes care of (most of) the demographic changes, i.e. changes in longevity. Financial stability is guaranteed by the automatic balance mechanism that is activated whenever the balance of the system is threatened, for example by an increase in average wages combined with a decrease in the labour force or by severe financial crises.

The tight connection between contributions and benefits means that excess burden from taxes/contributions decreases and also that incentives to work longer hours or to postpone retirement are increased, counterbalancing some of the demographically induced decrease in the labour force. However, the range within which this tight connection is effective is rather narrow; the guarantee pension and housing allowances in the lower part of the income scale and the ceiling in the upper part weakens these incentives.

The new system will offer lower replacement rates than the old system promised to provide. Note, however, that the old system was considered unsustainable by a number of investigations – benefits that had been promised would probably not have been paid out. The lower replacement rates are mostly due to the construction of the annuity divisor; increases in longevity decrease the annual benefit. The bill for increased longevity is not passed on to the younger generations but paid for by those enjoying it. The reduction in benefits can be counterbalanced by postponed retirement. Thus, the new system empowers people to choose between consumption and leisure, provided that the labour market is flexible enough to accept older

workers. This is not the case today. Labour market institutions demand people older than 67 years to leave salaried employment. Without changes in the labour market, pension benefits will be low and the stability of the system threatened.

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Chapter 5
Ways of Funding and Organising Elderly Care in Sweden

Per Gunnar Edebalk

Abstract Elderly care in Sweden is an important municipal task and a more specialised care was introduced in 1918. Since then the development of elderly care has evolved in terms of a three stage process and each phase has been characterised by path-dependent processes. Critical junctures have been reached around 1950 and around 1990. Since 1990 the municipalities have been given extended options to organise elderly care and they are now trying to find means of increasing efficiency in elderly care. One possibility has been to privatise parts of the care. The demographic challenge of an ageing population will affect the possibilities to finance elderly care in the future. This will probably lead to a new critical juncture at which the State will take financial responsibility for elderly care and introduce elderly care insurance.

5.1 Introduction

Elderly care has for many decades been an important municipal task in Sweden. Care for the elderly is a social right and regulated in the Swedish Social Services Act. Characterised by a long tradition of extensive local self-government, the 290 local municipalities, to a great extent, decide on issues concerning care of elderly people. Financing of elderly care in Sweden is mainly derived from local taxes and the total cost is ~80 billion SEK, which corresponds to 2.6% of the GDP (Socialstyrelsen 2007). Consumer fees for individual users, limited to a maximum level that is set rather low, finance around 5% of the costs.

P.G. Edebalk
Centre for Economic Demography and School of Social Work, Lund University, Bredgatan 13, 221 00 Lund, Sweden
e-mail: per_gunnar.edebalk@soch.lu.se

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Table 5.1 Elderly people receiving home help in 2007

People in ages	Total	%
65+	153,700	10
65–79	42,700	4
80+	110,700	23

Source: Socialstyrelsen (2008)

Table 5.2 Elderly people in special-housing care in 2007

People in ages	Total	%
65+	95,200	6
65–79	18,800	2
80+	76,100	16

Source: Socialstyrelsen (2008)

Elderly care includes both home help services, i.e. varying forms of assistance in a home environment, and institutional or special-housing care (old people's homes, nursing homes and similar). The number of senior citizens that receive either of the two forms of elderly care is roughly 250,000 persons, which equals 15% of all old-age pensioners (65+). Around 95,000 of these live in some form of institutional facility. Especially for persons above the age of 80 the number of recipients of elderly care is high (Tables 5.1 and 5.2). Their share of home-help services is 72%. Regarding special housing care, they represent ~80% of the recipients.

Local municipal care of the elderly has evolved historically from poor relief. Prior to 1918, no specific care for elderly people existed within the regulated municipal poor relief system. Not until the introduction of the Poor Law of 1918 did local authorities assume responsibility for providing special care for the elderly, albeit restricted to the establishment of old people's homes. The development of elderly care has evolved in terms of a three-stage process.

1. Between 1918 and 1949 municipal elderly care was limited to care in old people's homes
2. From 1950 to ~1990 home help service was introduced and developed
3. From 1990 and onwards the responsibility for home-based nursing has been transferred to the municipalities and these have attained a higher degree of choice when organising elderly care

In essence, public financing and demographic preconditions have defined the frameworks for the development of Swedish elderly care. Each phase in the development is characterised by path-dependent, self-reinforcing processes (David 2001; Pierson 2004). Within each phase, leading public representatives for elderly care have tended to hold on to the past, resulting in restricted and limited choices of action later on. When eventually reaching so-called critical junctures, there has been a shift to a new path, which could prove difficult to leave at a later stage in the process. This chapter commences with an illustration of path dependence and of critical junctures in the history of Swedish elderly care.

5.2 The Establishment of Old People's Homes

Around the turn of the last century, roughly three quarters of the Swedish population lived in the countryside. Most of the numerous municipalities, numbering more than 2,400, were very limited in size. The norm was for adult children to take care of their elderly parents when they no longer could provide for themselves. Elderly people without means of their own or close relatives had to seek help from the local poor relief authority. The municipalities were largely free to decide over poor relief according to their own preferences. Possibilities to appeal did not exist and the recipients of poor relief were under the dominion and authority of the local poor relief board (Edebalk 1991). The unsatisfactory state of affairs within the poor relief system was apparent. The elderly in need of care, especially in rural areas, could be eligible for four different types of support. The first was to offer a person lodging and food in a household paid by the local authority to provide this service. A second option was to auction off the care of the elderly through which the local authority awarded custody to the person demanding the lowest sum for providing this service, which often meant that other poor people became carers for the most destitute. A third alternative was a system of rotating care, in which the person in need constantly had to move from one carer household to another. Yet another possibility was to place the elderly person in special poor relief institutions, such as almshouses or workhouses, which accommodated various sorts of people of different ages under one roof: the young and the old, the chronically sick with the mentally ill, and alcoholics together with orphans.

The lamentable conditions within the poor relief system drew increasing public attention around 1900 and in the early 1900s. The issue of poor relief had been discussed publicly prior to this when a proposal for introducing a system of old-age pensions had been raised as a solution for taking people out of poor relief and thus cutting costs for the local authorities. The aspect of local economic conditions was essential since the share of elderly in the population had increased substantially and was higher in Sweden than in any comparable country. From constituting 4.8% of the population in 1850, the share of the elderly (65+) almost doubled to 8.4% in 1900 while the percentage of elderly in, for instance, Great Britain and Germany still amounted to no more than 4% of the total population. Due to the financial obligation placed on individual municipalities to pay for local poor relief and to the fact that most recipients of care were old and infirm, many small rural communities found poor relief a heavy burden to bear.

In 1913, the Swedish parliament decided to introduce national pension insurance in Sweden. It was the first of its kind worldwide to embrace the entire population and specific insurance fees financed the pension (Edebalk 2000). Due to this, local governments were partly alleviated from the economic load of poor relief and a modernisation of the system became possible. According to the new Poor Law of 1918, municipalities were obligated to provide housing for elderly in old people's homes. These had to abide by certain quality standards and should resemble a private home in character. The function of old people's homes was to give support,

housing and care to the elderly. Especially the housing aspect was essential as many of the poor lived in dire residential conditions (assuming they had access to some form of dwelling). The function of the old people's home was to offer the elderly a refuge fit for human beings, much in line with bourgeoisie accommodations provided for the so-called "pauvres honteux".

The decision to delegate the care of the elderly to local authorities through the 1918 Poor Law carries more than one possible interpretation. One general assumption was that the national pension insurance to a certain degree would level out the burden of poor relief between municipalities and thereby enable small communities to establish old people's homes. The main argument, however, was that social and geographic proximity between the giver and the receiver of care would facilitate the assessment of which persons were in need of care and support. One also expected cost-efficient incentives for the provision of poor relief to arise from municipal authority. Further, it is likely that restrictions to local governmental autonomy at the time were politically unacceptable, not least with regard to Sweden's long-standing tradition of municipal self-rule on poor relief issues.

The reform of 1918 was a success measured in numbers. One major obstacle, however, was the mix of recipients and the limited size of numerous institutions. As opposed to larger old people's homes, smaller homes had limited resources for separating the different groups of recipients, e.g. specific sections for mentally ill people or for those suffering from chronic diseases. Other obstacles particular to homes with fewer residents, thus mainly occurring in smaller municipalities, also transpired. Problems with recruiting competent staff to old people's homes were common, especially in areas suffering from extensive labour out-migration. Often it was a question of storing the elderly rather than caring for them.

The continuous urbanisation during the interwar period led to further difficulties in the running of old people's homes. In the beginning of the period, a majority of the Swedish population lived in the countryside: in 1940, the rural population had become a minority. Consequently, small communities became more numerous and by 1940 close to half of all Swedish municipalities had less than 1,000 inhabitants (SOU 1942, p. 56). The Swedish parliament decided to change the division into local government areas, partly with the intent to improve the quality standard of old people's homes and the reform came into force in 1952. This was one essential precondition for reforming elderly care. Another was the parliamentary decision in 1946 to introduce a system of old-age pension. The previously implemented national pension financed by insurance fees had only provided meagre support to the elderly, forcing many of them to seek additional help in the form of poor relief. The new system of a tax financed old-age pension, however, provided all those who had reached 67 years of age with a sufficient standard pension while housing allowances for elderly also were introduced. From this point on, elderly people were relieved of poor relief.

In 1947, the parliament approved new guidelines for old people's homes. The decisions to introduce the old-age pension and to create larger municipalities acted as important preconditions for the implementation of these guidelines. It meant that old people's homes would no longer be institutions for the poor but homes for all

elderly people in need of care regardless of their private economic status. Instead of being recipients of public relief, the residents would become full-time boarders, and most of them would have access to single rooms. Changing the recommended size of old people's homes was another essential enhancement of the standard as the minimum number of places was set to 25. This also meant improved working conditions and thus facilitated recruitment of competent staff. The parliament further stated that care of the chronically ill was no longer a local municipal responsibility but fell to the county councils to provide.

One might ask why the new guidelines in 1947 did not also embrace the issue of home help service to the elderly. Albeit no explicit discussion occurred at the time, several likely reasons behind the one-sided emphasis on elderly care through old people's homes can be identified. In Swedish agrarian society, caring for the elderly in special homes was a deeply rooted ideology. The de-population of rural regions rapidly progressed in the interwar years, especially from the mid-1930 onwards. The outcome was twofold; a surplus of elderly in the countryside combined with a female shortage in the rural population. Not only did the majority of old people continue to reside in the countryside but their housing conditions were often hopelessly dated and lacked modern conveniences such as electricity and water supply. Under such preconditions, it would have been impossible to recruit home help staff. The geographical distances were large (considering that motoring was still undeveloped) and a substantial amount of practical work had to be performed in inferior dwellings. It would simply have required hoards of home help staff. The generations of youths that were expected to enter the labour market after the war were small as consequence of low birth rates in the 1920s and 1930s. Thus, the positive post-war labour market situation created a fierce competition for new entrants on the labour market and the prospects for rurally based home help work would not have been attractive. Such working environments would not be competitive in comparison with urban positions within trade, commerce and business sectors and home help service was never brought up as an issue in the discussions on reforming the elderly care.

To implement the guidelines of 1947 would entail huge building programmes since available demographic prognoses predicted rising numbers of elderly people. As the Swedish economy in the post-war years started to become over-heated, this would turn out to be a tangible obstacle to the reform plans. There was a halt to social reforms in 1948 and prospects for the 1950s were not looking bright. For the increasing group of elderly people in need of care, the municipalities could only provide old people's homes built in the 1920s and 1930s. At that point, the author Ivar Lo-Johansson undertook an investigating tour to old people's homes throughout Sweden that came to receive much attention (Gaunt 1995). He wrote articles on what he saw, filled with indignation, and his involvement had a strong effect on the public opinion. One aspect that caused debate was the system of mixing different groups of care recipients but what raised most attention, nevertheless, was the general morale, the lack of spirit within the care of the elderly. A sense of passiveness and gloominess prevailed, even a feeling of deprivation of old people's human value and will to live. It was the own home that gave meaning to life and that

was where old people should be offered help and support. Lo-Johansson's slogan was "home-care instead of care-homes".

5.3 The Development of Home Help Services

Around the late 1940s, Swedish elderly care had plunged into a state of crisis. The local Red Cross organisation in Uppsala initiated home help services for the elderly in 1950 (Edebalk 1991). Experienced housewives were recruited for this purpose and the successful outcome was threefold; the elderly were pleased, the demand for places in old people's homes went down, and recruiting predominantly middle-aged housewives who were not normally at the disposal of the labour market turned out to be fairly easy. This became a turning point and the same development quickly followed suit in other municipalities. Often initiated by voluntary organisations, home help services after some time shifted over to the local authorities due to the increase in the number of recipients of care.

From the start, home help services grew in urban settings and the preconditions for this form of elderly care differed from previous ones. The old-age pension reduced the supportive function that old people's homes had filled. The building of better and more modern housing, in particular in densely populated areas, enabled old people to stay in their home and constituted a better-suited working environment for home help staff. The question is then, how was the recruitment of home help employees possible in the early 1950s? The answer can primarily be found in improved housing standards and in the progress that took place within household and domestic appliance technology. This development paved the way for part-time work in elderly care for housewives, which meant that a large and previously hidden labour reserve was unveiled. Home help services expanded substantially and, in contrast to the old people's home system, the stigma of being associated with poor relief was never present.

A special governmental subsidy for home help services was issued in the mid-1960s. The expansion was prolonged and peaked in 1978 (Szebehely 1995), see Table 5.3. The notion of home help service as a cheap form of elderly care had

Table 5.3 Recipients of home help 1969–1992

Year	Numbers
1969	230,557
1972	292,448
1975	328,552
1978	352,466
1981	346,543
1984	313,453
1987	314,204
1990	302,385
1992	271,316

Source: Statistisk årsbok 1972, 1980, 1987, 1994

prevailed from its initial phase when housewives, paid only symbolic wages, had constituted the majority of voluntary workers in home-based care. From the mid-1970s, however, full-time housewives had more or less disappeared in Sweden and it became vital to recruit care staff based on competitive market wages. At the same time, the demand for care per recipient increased, which elevated the required level of competence and education of the care staff. Hence, costs for home help services went up.

The cost rise in the provision of home help service was made less obvious by several means. Governmental subsidies were given to municipal home help services but not to old people's homes. For recipients of care living in their own home, the fee was low and a housing allowance could be provided to cover the rent. Residents in old people's homes had to pay a full-time boarding fee, which amounted to 70% of the old-age pension and 80% of all other income on top of that. Hence, for both the elderly and the local authorities, it seemed cheaper to provide home help services in private homes. In reality, the costs could turn out to be exceedingly high in comparison with elderly care given in an old people's home or nursing home for those in need of extensive care.

Home-based elderly service was considered the superior alternative and during the 1980s, a final discontinuation of homes for old people came to the fore. Some municipalities went so far as to move their elderly in need of care from care in nursing homes to care in their own home.

Those who received care in nursing homes run by the county councils only paid a small standard fee for the care. In relation to old people's homes, the economic advantage of having elderly persons admitted to nursing homes was substantial, both for the local authorities and for the individuals themselves (and, not least, for any potential heirs). Nevertheless, even though nursing homes appeared to be an economically attractive alternative, they were (and still are) considerably more expensive than old people's homes when all aspects are taken into account. Particularly the density of staff in nursing homes, and thereby labour costs, are high.

5.4 Times of Reappraisal Around 1990

Home help services for the elderly had become more expensive, and the change had come about at the same time as public finances were under pressure and demands for elderly care increased. In the 1980s, home help services became increasingly oriented towards more extensive and heavier forms of care and the total number of recipients decreased. At the end of the decade, it became increasingly apparent that Swedish elderly care was suffering from severe system failures. By way of illustration, only one new home for old people was built in the 1980s in Sweden as a whole. Calculations of public expenses for elderly care provided through this new modern home for old people, showed that total costs would have increased by 35% had the care recipients lived in their own homes and instead been given home help services

(Edebalk and Persson 1988). Home help services for elderly with great care demands could thus be a very costly alternative.

Problems with sharing the responsibility for elderly care between the local municipalities and the county councils also occurred regarding who should pay for what. Medical treatment was the responsibility of county councils but elderly patients who, in effect, did not require more medical treatment came to occupy expensive hospital beds. This shift in cost allocation was of course beneficial to the local municipalities.

Problems within the elderly care system were politically addressed seriously in the late 1980s. The first step was a governmental decision to allow national subsidies and housing allowances to apply also to residents in old people's homes. The State would hence take a neutral stance with regard to homes for old people and home help services and the local authorities were given more extended options of choosing how they wished to organise their services. A noteworthy change was also the ending of municipal monopoly of elderly care; in contrast to previous regulations, the municipalities were now free to engage private companies to provide care for their elderly.

In 1992, a Community Care Reform (in Swedish *Ädelreformen*, Ds 1989, p. 27) was enacted, by which the municipalities were appointed the sole authority for all care and home-based nursing for the elderly. In addition, the local authorities were made liable for payment of costs for elderly who were in hospital but not in need of further medical treatment. The municipalities could thereby no longer evade the economic responsibility by throwing over costs to the county councils. The Community Care Reform in 1992 was a wide-ranging reform; ~55,000 former county council staff became municipality employees as a consequence thereof.

The reappraisal meant that Swedish elderly care entered a new path. In effect, the local governments were given more responsibility but also more freedom.

5.5 Elderly Care of Today and Future Challenges

The recent demographic development with a growing share of elderly has created a new sense of crisis awareness. Today the elderly (aged 65+) constitute around 18% of the population and prognoses indicate that the figure will rise to 25% in the year 2030 (see, Chap. 2). The share of very old people will increase but still comparatively little over the next 15 years; the major rise will come when the large generation born in the 1940s reach old age in the 2020s.

Those producing prognoses agree that the remaining years of life will increase in the future for those over the age of 65. The large and difficult question is what will happen to the general health, and therefore with the need for nursing and care, during these increased years. Two competing hypotheses are commonly put forward (Fries 1986; Batljan 2007; Meinow 2008):

1. A better general health leads to postponed illness and periods of illness are pushed forward towards a higher age as the years of life increase.

2. The period of illness and reduced functional capacity is increased. This increase in illness is due to more people surviving acute cases of illness but with permanently reduced functional capacity.

Many studies lend certain support to the first hypotheses. Some recent studies, however, show a degree of support for the second one. One factor that is also considered is that the prevalence of reductions in cognitive capacity increases with age. Even changes in life style of the population (e.g. increase in the number of overweight people or increase in alcohol consumption) will affect the future pattern of morbidity. Another factor is that people with an immigrant background have, on average, poorer general health than others and an increasing number of immigrants will be ageing in Sweden.

A recent Swedish study based on two representative samples of the Swedish population aged 77 and older (1992 and 2002) suggests a worsening of health during the 10-year period measured (Meinow et al. 2006). According to the study, serious health problems increased significantly during this period and the increase was highest for multiple diseases and symptoms. The number of old people in the future will be higher and, as the oldest old represent a large majority of recipients of elderly care, this will have implications for the future demand for care and nursing.

Since 1990 when the new path was embarked upon, the economic situation for local governments has been rather difficult. Elderly care has largely become concentrated on pensioners with extended care demands. Municipalities have made adjustments by cutting down on the supply of care (reducing certain services) and applying more strict needs-assessments and thereby excluding persons with more limited needs from municipal elderly care. This has resulted in elderly people purchasing market-based care services to a greater extent and voluntary organisations becoming increasingly involved in elderly care. In the last few years, local governments have made extensive reductions in institutional care and instead focused on home help service, which in essence is an expensive alternative for those with great care needs. The substantial public costs for home help services are concealed by the augmented tendency to shove the costs over onto relatives as providers of care. The carer in question is most often an elderly husband or wife. In recent years, there has been an increased awareness of the difficulties that many elderly carers face when having to take care of their partner in their own home (Socialstyrelsen 2007).

Due to the fact that municipal responsibility creates certain problems, several other conditions that are linked to municipal elderly care will be discussed.

One problem relates to the lack of interest from municipalities to accept care-demanding elderly people from other communities. It is likely that old people wish to live closer to their children but with the present local municipal financing, elderly persons with care demands only represent a cost to the receiving municipality. One might go so far as to say that municipalities that keep a very high standard in their elderly care, and hence are attractive to elderly movers, are punished economically.

Insufficient consumer influence on decisions made within elderly care has also been addressed in several contexts. Future recipients of care will probably express

higher demands on influence in comparison to those receiving care today. On top of this, Sweden has become a multicultural society. The number of elderly immigrants (aged 65+) today totals 170,000 and the number will increase. In the future, elderly care-consumers will be increasingly heterogeneous with regards to language as well as ethnic, cultural and religious characteristics. Elderly services provided by the municipalities must be adapted to these conditions and become more pluralistic.

Elderly care in Sweden is a social right. The outcome of this right, however, is dependent on, for example, financial and political conditions prevailing at municipal level. It is at that level that the efforts directed towards elderly care are weighed against other requirements from, for instance, the schooling and child-care systems. The rights are therefore obscure and seemingly arbitrary in a national perspective. The differences between municipalities are considerable, illustrated by the following numerical examples. The overall cost for municipal elderly care per inhabitant above 65 years of age is more than twice as high in the municipality with the highest cost compared to the one with the lowest cost (Socialstyrelsen 2007). The cost for a person receiving home help service only is, based on the same comparison, five times as high in the highest-cost community and three times as high for a person in special-housing care. It has been said that when it comes to elderly care, Sweden is not a welfare state but 290 welfare municipalities (Trydegård 2000). The local variations can only to a minor part be explained by structural or geographical factors. Variation seems to depend more on historical factors (i.e. previous costs or coverage rates) than on local differences in levels of need or economic and political conditions.

Within municipalities, different means of raising the efficiency within elderly care are sought after. One possibility has been to privatise parts of the elderly care by inviting tenders from private care providers. This implies that a number of providers compete for time-limited contracts, often 3-year agreements, for running a special-housing unit or for providing home help services in a specific area by sending in tenders. The tender that, according to municipal criteria, offers the agreed services to the lowest cost is awarded the contract. The incentive of this tender procedure has primarily been to lower costs. Presently, slightly more than 10% of the consumers of elderly care in Sweden receive help from a private provider. However, this form of elderly care is showing signs of stagnation, mainly due to risks of impairing the quality of care as a result of cost cuts.

In ∼30 of Sweden's municipalities, a more radical change has been introduced in the form of a consumer-choice system (Konkurrensverket 2007). Consumer-choice means that the user is free to choose a care provider other than the municipal one. The financing of a consumer-choice system does not differ from elderly care in more traditional forms. In essence, it is thus local taxes that are used and the local government still exercises its municipal authority and the responsibility for, among other things, assessments of care needs.

One motive for introducing consumer-choice has been to enhance freedom of choice for the care recipients. Not least is it likely that future receivers of care will have stronger preferences than present ones regarding which provider they prefer. There is also a competitive aspect as the presence of more care providers is assumed

to stimulate market competition. This competition is not based on price, since the municipality decides on the same payment per hour to all providers, but on the quality of supplied services. In order to gain new customers and retain already existing ones, the care providing companies must meet care recipients with kind treatment and have competent and involved co-workers. The care providers have to respect agreed time schedules and produce well-performed work efforts, thereby establishing a good reputation.

A quasi-market is thus created through the system of consumer-choice. The competition can improve the development of new methods and, as a consequence, the productivity and cost efficiency in the care sector. There are incentives for care providers to produce the total number of approved care hours since they are paid per hour for provided home help services. Without consumer-choice, many approved hours will not be produced for different reasons, so with consumer-choice the care recipients can receive more hours of home help care. Hence, productivity as well as quality can be increased.

5.6 Financing of Elderly Care

Historically, the main source of financing has been local taxes. A continuation of tax-based financing presumes that tax revenues can be channelled to elderly care in pace with an increasing demand for care. However, to increase tax pressure in the future could turn out to be problematic considering that the basis for taxation has become more flexible. People, capital, products and services nowadays easily move across national boundaries. The more extended these flows are, the more restricted the level of taxation will be.

The challenges presently facing elderly care could result in a more substantial degree of financing through fees. Bearing in mind that the real costs for elderly care services are very high, it will only be possible to finance a small share of future elderly care with fees. If high-income earners have to pay huge fees, the likelihood that they will quit the public system and instead opt for private solutions increases. In that case, elderly care will run the risk of coming to resemble poor relief once again. Furthermore, higher fees could lead to an amplification of the marginal taxation effect. The outcome could be a lowered level of savings.

In recent years, insurance has been discussed as a possible source of financing (Söderström et al. 2001). Elderly care insurance may be compulsory or voluntary. Could voluntary insurance positively contribute to a strengthening of elderly care? Three advantages with voluntary insurance are often given. One is the added resources to elderly care that it could give. Another is the improved security in old age that such insurance may provide certain groups with. Thirdly, competition between insurance companies might also stimulate a development of elderly care as an effect of customer demands for differentiation of services.

Several problematic issues linked to voluntary insurance for elderly care can be identified (Kumar et al. 1995; Edebalk and Svensson 2003). One specific obstacle is

the implication of the long-time perspective. Since the need for care probably will arise first at a distant point in the future, there is uncertainty as regards the care needs and supply of care one might experience ahead. When signing up for insurance, it is essential to have knowledge concerning what the insurance will provide. Hence, it must be difficult to convince a young person to pay insurance for care that will be needed and offered 50–60 years from now. Elderly people will instead constitute the majority of voluntary insurance holders; consequently, the fees will be very high.

One vital question is which forms of service that could be eligible for voluntary insurance. Today, domestic services such as laundry, cleaning and gardening, are to a lesser extent than before supplied within the framework of Swedish elderly care. It is likely that such services would be interesting to offer through voluntary insurances. Less probable is a form of insurance that solely provides domestic services, as most elderly people at some point in time can be expected to need household services. In case the probability for an event to occur is high, the most reasonable and cheapest strategy is to increase savings rather than to buy insurance.

It is furthermore complicated to define the coverage of elderly care insurance. Presuppose that coverage is independent of needs assessments made by municipal authorities. If the insurance in question is to provide domestic services and minor care service for relatively healthy old people, a problem of moral hazard will arise. A large group of insurance holders, who might have been paying for elderly care insurance for years, can claim they have a need and demand compensation from the insurance company. The higher the required degree of disability is, the more limited the problem of moral hazard will be.

Alternatively, the municipal needs assessment could be made decisive. Only if the local authority deems that a person is in need of care will that individual receive help from the insurance company and then only with services, or monetary subsidies for services, that are not included in the municipal elderly care. Due to the existing discrepancy between municipalities with regards to both assessment of care needs and the supply of services, this system could cause major problems. What would be covered by insurance in one municipality would not be covered in another, and the insurance holders would most definitely consider this as profoundly unfair.

The presence of asymmetric information poses another problem; insured persons benefit from having knowledge of their health status and functional capacities, insights that are better than any insurance company can expect to gain. Thus, there is a risk of adverse selection. People with relatively high risks (e.g. those suffering from certain diseases) will perceive of an insurance alternative as attractive and be willing to pay the premium while those with low risks (e.g. young and fit individuals) will decline to enter the insurance system as they will not consider it worth the money. For the insurance business, this is a problematic outcome that could lead to even higher premiums, since there is an increase in the number of high-risk customers.

In addition, the insurance companies might face political risks that are difficult to predict, illustrated by the following example. In the late-1990s, a proposal for private and voluntary insurance that partly would protect the individual care

recipient from high fees for elderly care was discussed (Fölster 1998). At the time, most municipalities applied earnings-related fees, i.e. the higher the income a person had, the higher the fee was. Hence, there was motivation for some high-earners to sign up for insurance that could bring a certain degree of economic security in old age. Today, this form of insurance is ineffective due to a national decision taken in 2002 to introduce a maximum "ceiling" for the fee. User fees within Swedish elderly care are nowadays very low.

Strong arguments indicate that potential voluntary insurance for elderly care would exert only limited influence on the elderly care in Sweden. A compulsory insurance for elderly care has been initiated in a few countries, for example in Germany and Japan (Sato 2006; Ikegami 2007). The insurance system in these two countries differs with regard to organisation, financing and levels of compensation. The German system links the elderly care insurance to existing national sickness funds whereas the municipalities are responsible for the insurance in Japan. Also, with regard to the level of the insurance premium there is a distinction between the two; while constituting a certain percent of the income in Germany, it is strongly subsidised through taxes in Japan. An interesting difference is that only Japanese income earners above 40 years of age contribute financially to the insurance. This can be interpreted as a positive family policy effort aimed at young families with children and as a method of mitigating possible generational conflicts.

The German insurance does not normally guarantee full compensation of costs. It provides a partial contribution for the financing of care cost; remaining costs are expected to be covered by the elderly care recipient him/herself or relatives, or by the social services. In Japan, the insurance will cover 90% of the care costs. One important distinction is that family or relative carers can receive monetary compensation in Germany but not in Japan. The level of payment is, however, much lower for this group of carers than for professional ones. The Japanese system has instead opted for a shift away from the traditional family system by encouraging women to participate in the labour market.

In recent years, the issue of Swedish compulsory elderly care insurance has been debated. There are four feasible pros for introducing such insurance.

1. Elderly care insurance can facilitate the financing of elderly care. This presupposes a switch from municipal taxes to insurance premiums. A compulsory insurance premium could be seen as an earmarked form of taxation that would be used solely for elderly care. It is likely that such a specific tax more readily than a municipal general tax would meet with civic acceptance. If need be, it would probably also be less difficult to increase that sort of insurance premium at a later time, compared to raising the level of a general tax.
2. Elderly care insurance is a means of rewarding good quality in elderly care. In Sweden, a care recipient that arrives in a community is regarded as a municipal cost only. In case the arriving care recipient brings along insurance money, he/she will also represent a source of revenue to the municipality. This

could in turn lead to rewards for communities that offer elderly care of high quality.
3. Compared to the current situation, the status of elderly people could be strengthened and their influence could increase. Care providing companies, both private and municipal, could develop and the tendency towards consumer-choice would be enhanced. As a consequence, a system of pluralistic care provision may be created in which companies with diverse care services could emerge.
4. Preconditions for the elderly care throughout Sweden to become fair and equal could improve through a system with national elderly care insurance. The result could be that discrepancies between local communities, and consequently perceived injustices, are reduced.

These are hence the principal pros that are referred to when discussing compulsory elderly care insurance. What about the possible cons for such insurance then? A compulsory insurance premium, such as this form of earmarked tax, could encroach on the flexibility of budget alternatives as it creates obligations for certain future priorities. In the future, priorities other than elderly care might become more relevant. How important is municipal democracy for elderly care? What influence would different competing interests in the various municipal sectors exert on the development of elderly care? Questions like these must be addressed and answered before deciding on the financing of elderly care in the future.

5.7 Conclusion

Since a more specialised care of the elderly was introduced in Sweden in 1918, there has been distinct dominance of specific care ideologies. The prevailing ideology has been based on conceptions of what constitutes good care for the elderly but not seldom have these conceptions led to situations where one has held on to the past too firmly. During the period 1918–1949, homes for old people were the obvious alternative and the development of elderly care came about through the establishment of old people's homes. The guidelines for modern homes for old people that were approved by the parliament in 1947, rested on ideas formulated in the early 1900s. In turn, these ideas can be linked to dire living and housing conditions for the elderly, especially in the poor and rural segments of the population.

Around 1950 a critical juncture was reached and after that point, the home help service system developed. The growth of home help services was mainly founded on urban conditions in which the standard of housing had become decent and where a surplus reserve of labour existed in the form of housewives willing to work for symbolic payment. This circumstance was completely excluded from the overall picture when the guidelines for modern old people's homes were enacted in 1947. The emergence of home help services was further based on the assumption that home help service was cheap and that elderly people as a rule preferred to reside in

their own home. That conception, as it eventually would turn out, resulted in system failures and unnecessarily high costs. One was, once again, "stuck in the past".

The next critical juncture took place around 1990. The national government support for home help services was replaced by a neutral attitude from the State; the municipalities were given increased freedom to organise elderly care locally and took over the responsibility for home-based nursing. That is the path presently being developed and along which the local authorities are trying to find means of increasing efficiency within elderly care. What is left of the introduction of specialised elderly care in 1918 is the municipal responsibility. It remains to be seen whether the demographic challenge of an ageing population and the observed problems arising from the system of municipal authority will lead to another critical juncture, at which the State will take financial responsibility for Swedish elderly care and introduce elderly care insurance.

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Chapter 6
Financing Healthcare: A Gordian Knot Waiting to Be Cut

Björn Lindgren and Carl Hampus Lyttkens

Abstract The difficulties in financing healthcare in Sweden will increase in the future. Based on simulations with a dynamic micro-simulation model (SESIM), where individual healthcare expenditure is a function of *inter alia* health status, we expect a 30% increase between 2000 and 2040 in the total number of bed days for the whole population, due mainly to an increasing population of the oldest old. Hence, the ageing of the population is not just an issue of shifting the cost of dying to older ages. At the same time, the development of new technologies and the way these are disseminated across patient groups will continue to raise the cost of high-quality care. While there is likely to be some scope for greater efficiency on the supply side, changes in the institutional structure are unlikely to be drastic and even drastic policies may have relatively little to offer in practice. Explicitly giving low priority to elderly patients in the way implied by straightforward QALY calculations or the "fair innings" argument will hardly be accepted by Swedes in general. Hence, in the absence of politicians with the impact of someone like Alexander the Great, the future seems to have in store longer queues, greater reliance on private insurance, and political equivocation.

B. Lindgren
Centre for Economic Demography and Division of Health Economics and Forensic Medicine, Faculty of Medicine, Lund University, BMC D1143a, 221 84 Lund, Sweden

Department of Economics, University of Gothenburg, Gothenburg, Sweden

National Bureau of Economic Research (NBER) Cambridge, MA, USA
e-mail: bjorn.lindgren@med.lu.se

C.H. Lyttkens
Centre for Economic Demography and Department of Economics, School of Economics and Management, Lund University, Scheelevägen 15B, 223 63 Lund, Sweden
e-mail: carl_hampus.lyttkens@nek.lu.se

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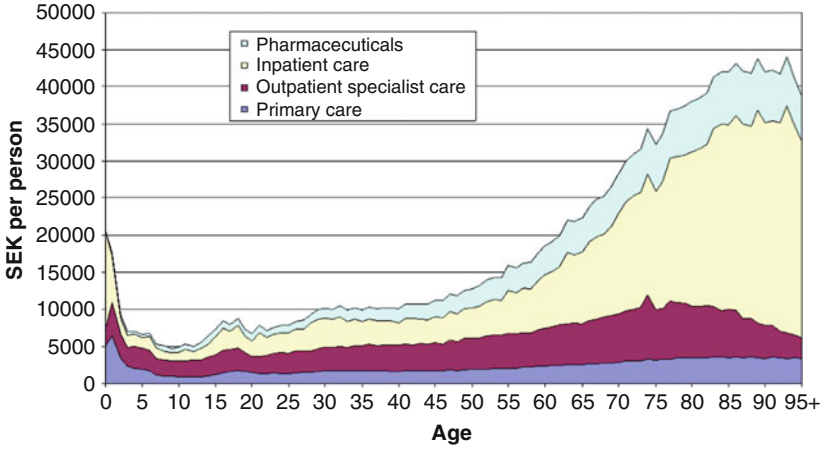

Fig. 6.1 Healthcare cost per person by age and type of healthcare, County Region of Skåne, Sweden 2004
Source: Pontus Johansson, Ministry of Health and Social Affairs. Calculations based on data from the County Region of Scania, Sweden

6.1 Introduction

The purpose of this chapter is to present the challenges that an ageing population poses for the financing of Swedish healthcare and to explore possible responses and solutions. The latter, we argue, mostly turn out to be non-solutions when critically and realistically examined. What we seem to need is a Swedish (democratic) Alexander, with the will, nerve and clout to introduce unprecedented policy measures.

The outline of this chapter is as follows: we will begin by providing some general characteristics of, and data on, the Swedish healthcare system with emphasis on elderly patients. The challenges of the ageing Swedish population will then be illustrated by presenting the results from micro-simulations of some future scenarios for the Swedish over-65 population. We will focus on inpatient care, because it is the dominant type of healthcare service in Sweden and since the annual cost for this care per person aged 65 and older increases faster than for other types of healthcare. Figure 6.1 shows the observed healthcare cost per capita in Sweden in 2004 by age (1-year age groups from 1 to 95) and by four types of healthcare (primary healthcare; specialist outpatient care provided in hospitals; pharmaceuticals; and inpatient care). It may be observed already here that the reason why we observe that healthcare costs per capita increase with age, and especially above 65 years of age, is not ageing per se even though old age may contribute, but mainly because of the fact that the probability for bad health increases with age and, hence, so does the demand for healthcare.[1]

[1]There is some literature showing that health status, i.e. ill health – maybe not totally surprisingly – is the most important factor determining the demand for inpatient care; see, for instance, Cameron et al.

6.2 The Swedish Healthcare System

The Swedish healthcare system is often characterised as a National Health Service (or Beveridge) model (Freeman 2000; Blank and Burau 2004). However, even though it is both financed by taxes and organised as a government responsibility, it has developed over time as a decentralised rather than a national system (Lindgren 1995). In Europe, only Finland has a more decentralised system (Häkkinen 2005). Most political decisions regarding health and healthcare are taken at the level of the (presently 20) county councils and 290 municipalities in Sweden. County councils and municipalities are local governments with high degrees of constitutional independence from central government and with the power to levy proportional income taxes on their residents in order to finance their activities.[2]

Central government has a more passive role in healthcare. Apart from supervising the fulfilment of the overall objectives of the healthcare legislation, which puts a strong emphasis on equity,[3] its influence is primarily manifested through indirect measures such as general and targeted subsidies. It can also impose ceilings on county council and municipality taxes, but only temporarily. Moreover, central government supervises healthcare personnel and performs evaluations of Swedish healthcare and related social issues through the National Board of Health and Welfare. Through the National Social Insurance Board, it administers the Swedish health insurance system. Although compulsory and financed through proportional payroll taxes, health insurance plays a minor role in the financing of healthcare in Sweden. Its primary purpose is to compensate individuals for income losses in periods of reduced capacity to work due to ill health. Until the early 2000s, health insurance also subsidised outpatients' expenditures on (prescription) pharmaceuticals. Finally, through the Pharmaceutical Benefits Board, central government controls which pharmaceuticals are available to patients at subsidised prices. Anell (2005) provides an updated account of the main characteristics of the Swedish healthcare system and how it has developed since the early 1990s.

(1988), Nolan (1993), Gerdtham (1997), Holly et al. (1998), Harmon and Nolan (2001), Gravelle et al. (2003), Iversen and Kopperud (2003), Höfter (2006), and Bolin et al. (2008b). There is a corresponding literature focusing on physician visits. Bolin et al. (2009), using individual data from ten European countries, show, for instance that individual health status explains 50% of the difference in the number of physician visits.

[2]As a matter of fact, most public services in Sweden, excluding defense, law and order, fall under the responsibility of either the county councils or the municipalities, whereas the central-government budget (including social insurance) includes most of the transfer payments. Healthcare accounts for ~85% of county council expenditures on average, the remaining 15% mainly being financial support to local theatres, concert halls, museums, and local public transport. Healthcare (for elderly suffering from long-standing illness) accounts for roughly 5 percent of municipality expenditures; main responsibilities are primary and secondary education and social services for all ages.

[3]The objective of the Swedish healthcare system is to "provide good health and healthcare on equal terms for the entire population regardless of where a person lives, and regardless of his or her income" (Swedish Healthcare Act 1982, SFS 1982, p. 763).

Out-of-pocket payments for patients are usually slightly higher in Sweden than in other European countries (Oliver et al. 2005). Moreover, since decisions concerning fees are made at the local level, they vary among the counties and municipalities (Sveriges kommuner och landsting 2007). For a regular primary-care visit, the lowest fee in 2007 was 100 SEK while the highest was 50% higher, i.e., 150 SEK. The fee for a visit to a specialist varied between 200 SEK and 300 SEK. Patient fees are subject to a cap, though, effectively limiting the maximum amount of out-of-pocket payments for services during a 12-month period to 900 SEK, which is the same for all counties. The maximum fee for inpatient care was 80 SEK per bed and day. Unlike many other countries in Europe, primary care does not serve as a gate-keeper. A referral from a primary care physician is normally not needed in order to visit a specialist at the hospital; the patient may have to pay a higher fee without a referral, though.

Regarding pharmaceuticals, patients pay the full amount for over-the-counter drugs, while pharmaceuticals prescribed to outpatients are subsidised at an increasing rate after the first 900 SEK. They are also subject to a cap, implying that the maximum amount of out-of-pocket payments for prescription drugs during a 12-month period is limited to 1,800 SEK. Pharmaceuticals consumed during inpatient care are free of charge. For dental care, patients pay the major part of treatment costs out of pocket.

Patients aged 65 and above pay lower fees for hospital care in most counties and lower fees for dental care in all counties (Sveriges kommuner och landsting 2007). Some counties apply reduced hospital fees for patients with low incomes while others do the same for patients with longer hospital stays, both being categories which include a large number of elderly. In one county, those aged 65 and above pay considerably lower fees for primary care and specialist visits. Another county applies lower fees for visits to geriatric specialists. Differences in fee schemes among counties result in that the elderly, often with long-standing illness, pay quite differently, depending on where in Sweden they live (National Board of Health and Welfare 2002).

In the 1990s, a few county councils tried paying providers according to predetermined rates based on the DRG (Diagnosis Related Groups) system. There were also attempts to introduce capitation payment systems in a family doctor-based primary care system.[4] Such systems are still used for paying private providers, but less so for public providers, the exception being public providers of family doctor services. County council block grants are currently the most common way of financing both inpatient and outpatient care. Publicly employed physicians and other personnel receive monthly salaries irrespective of performance. Performance-related remuneration is presently being tested, however, in order to improve performance, for instance, in the county of Stockholm.

[4]Capitation payment denotes a reimbursement system where a provider of healthcare (often a GP) is paid a fixed amount per person (often listed patients) for a given period (often one year), the important aspect being that the payment does not vary with the amount of services provided (e.g., patient visits).

The political responsibilities for financing and delivering healthcare are divided between the county councils and the municipalities.[5] While the municipalities have held the entire responsibility for old-age social care and assistance for centuries, they are also since 1992 responsible for taking care of elderly people with long-standing illness, both with reference to long-term care and, for instance, short-term recovery after an elderly patient is considered to be medically "discharge-ready" from hospital. Municipalities are then supposed to deliver the care and assistance that the discharge-ready patient may need. If a municipality cannot provide a bed in a nursing-home for a patient to recover, however, the prolonged stay in hospital will have to be paid for by the municipality. Since bed-days in hospital are much more expensive than in nursing-homes, there are certainly strong incentives for municipalities to plan for a sufficient capacity of nursing-home care.

Total national expenditures for healthcare are politically determined in all countries, either directly through closed budgets or through the legislation and rules governing healthcare (Zweifel and Breyer 1997). In Sweden, total budgets for healthcare are, to a very large degree, directly determined by political decisions; the exceptions are expenditures for dental care and for eyeglasses, etc, which are open systems and, as such, also expenditures determined by the reactions by consumers and producers to the rules set by government. In 2005, total expenditures on health accounted for 9.1% of the Swedish GDP, which is slightly above the reported OECD average of 8.9%.[6] That total spending on health is dependent on what a country can afford rather than what it may need was concluded already in 1949 by the late Swedish economist, Sven Rydenfelt (1949). Moreover, healthcare also appears to be a luxury good. Thus, there is a long-term trend that countries with a higher GDP per capita also spend a larger share on health. Hence, the USA by far spends the largest share; the Swedish share is roughly as expected, judging from its GDP level. Public funding is dominant in all OECD countries, the exceptions being the USA and Mexico. In Sweden, 85% of health expenditure was funded by public sources, somewhat above the OECD average of 73%. Approximately 70% of total Swedish healthcare expenditures is financed by county council and municipality taxes, about 15% by central government taxes (general and targeted subsidies), and around 15% by patients' out-of-pocket payments (National Board of Health and Welfare 2007).

Some 30 laws regulate the organisation, financing, and delivery of Swedish healthcare (Lindgren 2006). The most important, however, is the Swedish Healthcare Act (SFS 1982).[7] It should be noted that the Act does not award patients many rights. Instead, county councils and municipalities are legally and mandatorily

[5]There is one exception, however. The municipality of Gotland is responsible for all healthcare services within the municipality and serves in this capacity as a county council of its own.

[6]These figures relate to country definitions of healthcare expenditures, though, and are not strictly comparable. A System of Health Accounts with common definitions has been proposed by the OECD, and Sweden produced its first estimates in 2008, covering the years 2001–2006. According to these estimates, healthcare expenditures accounted for 9.2% of GDP in 2005.

[7]The Healthcare Act has been amended several times since 1982, sometimes back and forth, depending on changing political majorities in the Swedish Parliament.

responsible for providing the healthcare that residents in Sweden need. There are no sanctions stated in the Act against county councils or municipalities that do not follow the Healthcare Act, so there are few, if any, possibilities for individual patients or for central government to force county councils and municipalities to follow the Act. Evaluations carried out by the National Board of Health and Welfare show that county councils and municipalities – claiming their constitutional independence from central government – often act contrary to the Act and other central government regulations (National Board of Health and Welfare 2005).

The share of privately provided healthcare varies substantially among counties – from 2 to 23% (with 10% on average for Sweden as a whole). Private healthcare consists mostly of primary care; in 2007, there were only three privately operated hospitals. Most privately provided care is tax-financed through contracts with a county council or a municipality. Differences in the amount of private healthcare among counties reflect past and present local political majorities.

However, even though the share of privately provided healthcare in Sweden is fairly small compared with other European countries (Oliver et al. 2005), this certainly does not imply that the Healthcare Act or any other central government regulation forbids private provision of healthcare. As a matter of fact, a county council might, in principle, let private providers take over the delivery of all healthcare services within the county (including healthcare delivered by university hospitals).[8] In such a case, the county council or the municipality would become a kind of local healthcare insurance monopoly, with a flat, non-risk related, premium (tax rate) depending on annual income. As is obvious from the above, no county council (and no municipality) has chosen such a solution. According to the National Plan for Developing Healthcare in Sweden, the share of private provision was supposed to increase in order to introduce more alternatives for patients and more competition among providers (National Board of Health and Welfare 2005). There is no clear trend towards more private provision, though. At the time of writing (spring 2008), some county councils are introducing free entry for primary care physicians with a mixture of capitation payment and fee-for-service reimbursement for listed patients. Given the evidence from such initiatives in the past, though, they may very well be withdrawn after the next general election in 2010, depending on the political party/-ies in power.

6.3 Simulating the Development of Inpatient Care 2000–2040

In order to analyse the challenges posed by an ageing Swedish population to healthcare financing, we chose to focus on inpatient care. Even though it might be tempting and comparatively simple to make projections of future healthcare

[8]Between 1 January 2006 and 30 June 2007, however, an amendment to the Healthcare Act, passed by Parliament during a social democratic minority cabinet, introduced some exceptions to this paragraph. They were all abolished when the present (at the time of writing) right-centre majority coalition took over central government.

expenditures based on expected demographic changes and age-specific costs per capita alone, we did not pursue that line of investigation (this has been done before in various countries on a number of occasions),[9] preferring a completely different analytical approach. It is obvious, both from common sense and from a number of studies (some of which are referred to in the introduction of this chapter) that sick people of all ages are likely to incur relatively high healthcare costs, while healthy people in all age cohorts will incur relatively low costs. Thus, the most important determinant of inpatient healthcare utilization is not age *per se* but health status. There are also some other important individual characteristics to consider.

Our approach differs in two respects from the previous literature. First, rather than making some ad hoc estimates of the impact of age and/or nearness to death on healthcare expenditures, we based our projections on a firm theoretical foundation, namely the Grossman model of the individual-as-producer of his or her own health (Grossman 1972, 2000). In the theoretical Grossman model, extended in a number of ways, for instance, by Liljas (1998), Jacobson (2000), and Bolin et al. (2001, 2002a, b), individuals (or families in the extended models) invest in health by combining health promoting and preventive measures as well as curative measures with their own time in order to produce health. The trade-off between health and other commodities is determined by individual preferences.

The effects on health of (gross) investments in health are reduced, however, by the depreciation of health capital. The depreciation rate is assumed to increase with age and net investments will eventually become negative and health decline.[10] Whether this means that the demand for healthcare, which is one of the "market"-good inputs in the individual's production of his or her own health, and the use of the individual's own time decrease, increase, or remain the same is determined not only by demand but also by supply factors. A rise in the depreciation rate will reduce not

[9]In general, predictions of rapid growth in expenditures based on such projections have not been reflected in observed data; see, for instance, the overview by Payne et al. (2007). Based on retrospective studies that count individual healthcare expenditures backwards from time of death, it has been strongly argued that age is not an important determinant of expenditures and projections should be based on time-to-death rather than age (Zweifel et al. 1999). The empirical evidence seems to be mixed, however, and there is still no consensus in the literature (Payne et al. 2007). Moreover, while retrospective studies can be used to "explain" the impact of actual time to death, they have more limited value in predictions at the individual level, since actual time to death cannot be observed before death. One exception is a recent study, which does not study actual time to death retrospectively but rather predicts life expectancy (Shang and Goldman 2008). The authors found that age had little additional predictive power on healthcare expenditures after controlling for life expectancy. They also found that the predictive power of life expectancy itself diminished after the introduction of individual health variables. This should not come as much of a surprise, since there is firm evidence that health status, in particular self-assessed health, strongly predicts mortality; see, for instance, Mossey and Shapiro (1982), Idler and Benyamini (1997), Benyamini and Idler (1999), van Doorslaer and Gerdtham (2003), Helweg-Larsen et al. (2003), Baron-Epel et al. (2004) and Benjamins et al. (2004).

[10]It should be observed that an individual may also choose an unhealthy lifestyle that adds to the negative impact of depreciation and reduces the positive effects of healthcare and other inputs in the (gross) health investment production function of the individual.

only the amount of health demanded but also reduce the amount of health supplied by a given amount of gross investment. Under realistic assumptions, however, it is likely that the change in supply exceeds the change in demand, hence providing the individual with an incentive to close the gap by increasing gross investment (Grossman 2000, pp. 369–370). Gross investment and the depreciation rate will then be positively correlated over the life cycle, while gross investment and health will be negatively correlated. In other words, according to the Grossman model, it is likely that old (and unhealthy) people will make larger gross investments in health than young (and healthy) people. This also means that both age (due to the age-dependent depreciation rate) and health status (as the desired state) are important determinants for healthcare expenditures at the individual level.[11]

Second, rather than making projections directly regarding aggregate healthcare expenditures from a single equation, we use the results of micro-simulations where the behaviour, actions and interactions of individuals over their life-cycle are modelled. Certainly, a dynamic micro-simulation model does not provide forecasts, but it can answer some relevant "what . . . if"-questions. What will happen to total healthcare expenditures and the possibilities to finance them if the Swedish economy, the regulatory framework, technology, demography and so on develop in the future as they have in the past? What will happen if the health status of individuals develops in a better or worse direction than before? And so it continues. The answers will be provided by the sum of all actions and interactions taken by model individuals as responses to (new) circumstances included in the model. One way to look upon a micro-simulation model is as a kind of laboratory in which it is possible to evaluate alternative policies or other changing circumstances.

The simulation results that we report here were obtained from a dynamic micro-simulation model, SESIM from the Swedish Ministry of Finance. SESIM has recently been extended to include, inter alia, modules covering changes in health status and the use of inpatient care (Klevmarken and Lindgren 2008a). To assess the impact of the elderly on inpatient costs and the ability of society to provide for them, we will make use of some of the scenarios of this extended version of the SESIM model, presented in Chaps. 10, 12 and 13 of Klevmarken and Lindgren (2008a).

6.3.1 Some Characteristics of the Simulation Model

Events (variables) in SESIM are updated in a yearly sequence. The start year is 1999 and every individual included in the initial sample of about 100,000 individuals

[11]It does not follow from the Grossman model that the demand for healthcare as an input in the health investment production function for a given health status would be the same, irrespective of age. This seems to be a somewhat common misunderstanding in the literature; see, for instance, Payne et al. (2007, p. 245), and Shang and Goldman (2008).

goes through a large number of events, reflecting real life phenomena, like education, marriage, having children, working, retirement, and so on.[12]

The health status of an individual is simulated in the model.[13] The probability of a better health status is greater for an individual who has higher relative income, who has longer education and who has children. Being married or co-habiting, being born in Sweden, and being male also contribute to a better health status. Divorcees are less likely to be healthy than those who never have been married or cohabiting, and health decreases with age. The health status in the previous year is the most important factor for the current health of the individual.[14] The model simulates a decreasing health status for the elderly population over the years. This reflects observations made that the trend towards ever-healthier elderly seems to have been broken. The share of young and middle-aged Swedish men and women reporting a very good or good health status to the Swedish Survey of Living Conditions started to decline already in the early 1990s. As the cohorts are greying, the share of elderly people in good health has now started to decline, too (Klevmarken and Lindgren 2008b).

The health status of the individual together with, for example, age, education, relative income, gender, civil status (divorced), and foreign country of birth, determine the probability of the individual having an inpatient stay at hospital and, if so, the length of the stay.[15] The effect of health status is negative, i.e. people in bad health utilise more inpatient days. Being a man, being born in Sweden and being divorced all increase the expected number of days of inpatient care. Finally, the more inpatient care that was utilised in the previous year, the more inpatient care will be used in the current year.

6.3.2 Base-Case Scenario

We will now reproduce some results of the simulations. First, however, we re-emphasise that the simulations of the future should not be interpreted as predictions. Each scenario is based on a set of assumptions, and the model simulates the development over time following on from these assumptions. To some extent, all scenarios mirror the properties of the Swedish population, economy, rules and regulations from the 1990s and the first few years of the twenty-first century. The demographic changes in the simulation model correspond to the main projection from Statistics Sweden. In the base-case scenario, the expected lifespan is supposed

[12]For a presentation of the model, see Flood (2008).

[13]The indicator for health status is the health index, suggested by Statistics Sweden (1992). It has four levels, representing combinations of self-assessed health, etc as reported in the ULF data.

[14]The econometric estimations of the empirical version of the Grossman model on which the simulation module for health is based are reported in Bolin et al. (2008a).

[15]The econometric estimations on which the simulation module for inpatient care is based are reported in Bolin et al. (2008b).

to increase between year 2000 and 2040 from 78 to 83 years of age for a newborn boy and from 82 to 86 years of age for a newborn girl. Moreover, the macro-economic development is fed into the simulation model through a number of indicators such as the general growth in wage rates, the rate of inflation and the return on real and financial assets (Flood 2008).

Figures 6.2 and 6.3 show the simulated development of the total number of days of inpatient care for the populations aged 50–74 and 75 and above, respectively. The increase in the total number of days for both men and women in the population aged 50–74 are mainly due to increases in population size. That the female population aged 75+ has more days in inpatient care during 2000–2030 than the corresponding male population, despite the fact that a man on average spends more days in inpatient care, is explained by the fact that there are more women than men in these age groups. A relative increase in the total number of men explains why the male cohort appears to catch up towards 2040. The number of days of inpatient care increases by 80% for people aged 75 and above, and by 70% for those aged 65 and above.

6.3.3 *Improved Health Progression with and Without Decreased Risk of Death*

We will now turn out attention to some alternative scenarios. First, what would happen if, for some reason, health progression for the elderly were better than in the

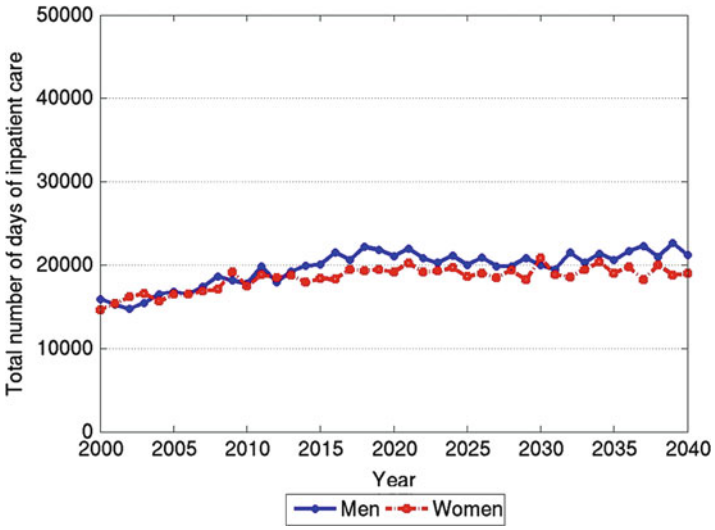

Fig. 6.2 Simulated development of total number of days of inpatient care for the population aged 50–74, men and women respectively
Source: Bolin et al. (2008b)

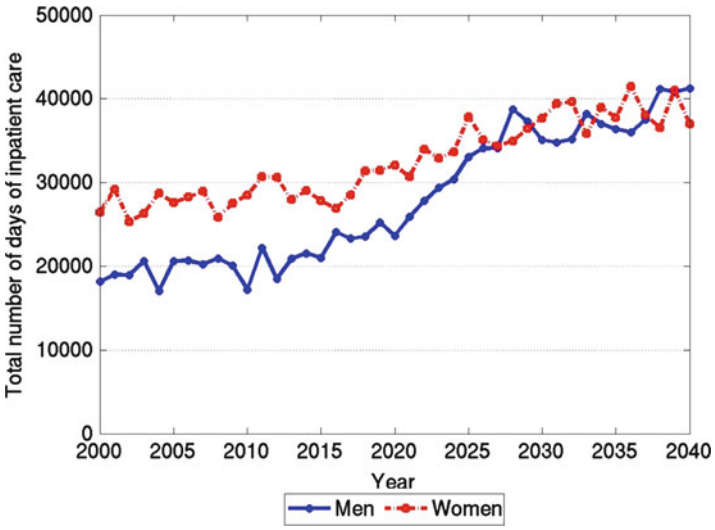

Fig. 6.3 Simulated development of total number of days of inpatient care for the population aged 75 and above, men and women respectively
Source: Bolin et al. (2008b)

base-case scenario?[16] To answer that question, the health index for those aged 40–90 was adjusted proportionally to their age minus 40 and the calendar year minus 2000 in such a way that a 90-year old person in 2040 will have the same health as an 80-year old in the base-case scenario. Since improved health status also should lead to a decreased risk of death and a longer life expectancy, an alternative simulation scenario lets each individual after year 2010 and after the age of 35–40 to enjoy the same risk of death as a person five years younger in the base case scenario.

Improvements in health as mentioned above would nevertheless not change the health status distribution of the entire population significantly. Compared to the base case scenario, the share of people with a severe health status would only reduce from 7.3 to 6.1% in 2040. Improved health per se should imply that the demand for healthcare decreases in comparison to the base-case scenario, and so it does, but only marginally for those aged 65+. On the other hand, if the improvement in health also led to more people surviving as above, the number of hospital days would increase by 150% for people 65 and above, due to the fact that there would be more elderly and the average age of the elderly would be higher. In the base-case scenario, the total number of days would increase by "only" 70% for the group aged 65+.

[16]Actually, the most recent ULF study reported that the health status of the Swedish population was higher in 2005 than in 2004. This is just one single observation, though, so it seems too early to conclude that the observed negative trend has been broken.

Increased utilisation per se implies higher costs for inpatient care. The cost increase would obviously be more pronounced if the unit cost of care also increased, as it certainly has in the past, due to demands for higher quality driven by increases in income. Assuming that the cost for a day in a hospital increases by the assumed real increases in the average wage rate and in the CPI, and that people also live longer as above, the total cost in 2040 would be six times of that in 2000. In scenarios without increases in life expectancy, total costs would increase by a factor of 3.6–3.7.

At least two caveats are in order. First, the SESIM simulation model still does not include a link between health status and mortality rate, even though there certainly is a strong association.[17] This means that the simulations probably overestimate the demand for inpatient care either because there would be fewer survivors among the elderly or because some of those individuals that have been simulated to have severe health problems would, in fact, have died. To include the link between health status and mortality at the individual level was left for future development work.[18]

Second, it should be emphasised that the simulations assume that the utilisation of healthcare follows the same pattern as in the 1990s, which generated the data that was used to estimate the model. If policy changes and these services become provided according to new principles or if the share of private services increases, the results would change, of course. The simulations should be seen as indicative of what might be needed, if public policy remained unchanged in these respects.

6.3.4 Incomes of People in Old Age

According to the simulation model, direct taxes paid by the household sector, using the tax system of 2005/2006, would increase at a much slower rate than the utilization and costs of healthcare. An indicator of the potential for increases in user charges is the poverty rate of the elderly.

In 2000, only 1–2% of those aged 65+ were poor. As the simulations proceed, the poverty rate would increase gradually. In the base-case scenario, the rate reached the high figures of 14–16% in 2040, and alternative scenarios gave the same general picture. There would, hence, be a rather large share of the elderly who would have great difficulties in paying higher out-of-pocket charges for healthcare.

[17]See footnote 9.

[18]Further developments of the model, including this association, is ongoing at the time of writing in a project led by one of the authors (Lindgren) and financed by the Swedish Ministry of Health and Social Affairs. The development work also includes modules for primary healthcare, outpatient specialist care at hospitals, and pharmaceuticals.

6.4 Not a Non-issue

It is obvious from a quick glance at healthcare statistics that per capita healthcare utilization increases with age, with dramatic increases among the oldest old (cf. Fig. 6.1). It is also a well-known argument in the health economics literature that this fact, based on cross-sectional data, does not necessarily imply that overall healthcare utilization will increase as life-expectancy increases. A pertinent fact (the "cost-of-dying" argument) is that healthcare utilization is very high in (roughly) the two last years of a person's life, irrespective of whether you die at 60 or at 90, so healthcare expenditure rises not with age but with proximity to death.[19]

Consequently, to clear the ground, it is important to emphasise once again that we use a different approach and base our view of the future level of expenditures on simulations, where individual healthcare expenditure is a function of *inter alia* health status. The estimated overall increase in the number of bed days in the population is largely an effect of a growing number of elderly (not of increasing life expectancy). The time-to-death effects are accounted for to the extent that they are reflected in the relationship between health status and utilisation of healthcare, which arguably ought to be the case (Shang and Goldman (2008) show that the predictive power of life expectancy for healthcare expenditure diminishes when individual health variables are introduced).

In other words, we are unfortunately confident that the effect of the ageing of the Swedish population on healthcare expenditure is not a non-issue. Based on the simulations and our reading of the literature, we would argue that healthcare expenditures per capita will increase as the proportion of elderly in the population increases in the coming decades.

Before proceeding, we also note that the relationship between age (and time-to-death) and expenditure is unlikely to be stable over time (Payne et al. 2007). As the proportion of elderly grows, their political influence as well as their influence as consumers will increase, likely increasing healthcare expenditure among the elderly due to more use of expensive treatments, less implicit age discrimination, and so on (Dozet et al. 2002). Furthermore, the relationship will change with shifts in the organisation of healthcare and medical technology. For such reasons, the relationships will to some extent be country specific.

The simulation results presented above suggest that the demand for inpatient care will increase substantially in Sweden over the coming decades, with roughly a 30% increase between 2000 and 2040 in the total number of bed days for the whole population, due mainly to an increasing population of oldest old. This suggests an

[19]Cf. Seshamani and Gray (2004) and Werblow et al. (2007), and footnote 9. A central question is whether, as mortality falls, there is a compression or expansion of the period of morbidity towards the end of life. Even if there is a compression of morbidity, it does not necessarily translate into reduced expenditure in the future, as the compression may in fact be the result of increasing healthcare expenditure (Payne et al. 2007, p. 245). We only deal with healthcare. Obviously, we expect that with increasing life-expectancy, there will be more years when the individual requires social assistance (see Edebalk, Chap. 5 in this volume).

increasing gap between the level of expenditure necessary to satisfy demand and the resources available, unless "something" changes. In Sweden, this "something" could be an increase in income taxation, but then again, probably not (see Chap. 3). The next question, which we will explore in the following sections, is whether changes *within* the healthcare sector offer a potential for closing the gap between available resources and the demand for healthcare.

The simulation model by necessity takes many factors as exogenously given. Most importantly, it takes as given the institutional structure and technology. These are two of the most important factors that shape the functioning of society (North 1981, 1990, 2005). Additionally, the simulation is based on factors that are assumed to affect the demand for inpatient care, whereas obviously utilisation is determined by both demand and supply side factors. This is particularly noteworthy in healthcare; here providers typically have huge informational advantages over consumers. "The noteworthy point is not simply that it is difficult for the consumer to judge quality before the purchase [. . .] but that it is difficult even after the purchase" (Weisbrod 1978, p. 52). There is a vast literature that focuses on how providers, especially doctors, may take advantage of the informational asymmetry to further their own interests (McGuire 2000).

Hence, the following investigation into possible ways to handle the prospect of a substantially increased demand for healthcare will begin by asking to what extent the upward pressure on healthcare expenditure can be mitigated by changes in technology or in the institutional structure, where we will focus in particular on the supply side.

6.5 Non-solution One: Technological Development

Technological change is – together with the emergence of democracy – the most outstanding characteristic of the last two centuries. It has fundamentally changed life in the industrialised world and provided the basis for an unprecedented increase in real incomes and living standards. Similarly, one of the outstanding characteristics of modern medicine is that it is a moving target. New technologies emerge continuously, information is rapidly disseminated through conferences, articles and so on, and the new technologies are gradually adopted all over the industrialised world.

The innovation process is however not random. On the contrary, whether there will be technological advances that reduce the cost of treatment of different diagnoses depends crucially on whether there are incentives to produce such new technologies. And the pertinent fact is that the incentives in the healthcare sector for long have been biased towards cost-increasing technologies (Weisbrod 1991).

Advances in technology are generally regarded as one of the main contributors to the rising healthcare costs during the last 50 years (Fuchs 1996, 1999; Newhouse 1992), together with rising real incomes. Even new technologies that on the face of it may look like cost-reducing innovations often lead to increases in expenditure because new patient groups are considered for treatment (Cutler and Huckman

2003). Evidence from the RAND health insurance experiment suggests that, of the sevenfold increase in healthcare expenditure between 1950 and 1984 in the US, only perhaps one fifth is due to the combination of an increase in the coverage of health insurance and the rise in real incomes, with technological change being a very good candidate for the other four fifths (Manning et al. 1987). In the context of the effect of ageing, Breyer and Felder (2006) suggest a substantial age-independent growth factor of 1% in per capita expenditure due to technological change, while Fuchs (1999) estimates a 4–5% increase in age-specific per capita expenditures among the elderly in the US over the period 1987–1995, due to both new technologies and to an increased use of existing ones.

Many years ago, Victor Fuchs (1968) coined the term "technological imperative" to describe decision making in healthcare: "always give the best care that is technically possible". One possible interpretation of this is that it is a "health imperative", which disqualifies the introduction of a new technology if it in practice would lead to a worse health outcome, even if using it would increase efficiency in health production by lowering costs. Cost-efficient technologies that lead to smaller health gains are even less likely to be contenders in medical practice if there also is a "professional imperative," implying a tendency to provide more healthcare as long as there is any positive contribution to health (Lyttkens 1999).

There are two important issues here. One is the propensity to use medical technologies with little regard to the cost side, as long as they promise to deliver a superior health outcome. The other is the disqualification of a potential category of cost-reducing innovations. The most important effect of this characteristic of *current* decision-making in medical practice is that it will have repercussions on R&D, i.e. on *future* technologies. Both factors bias the innovation process towards cost-increasing technologies. Efforts to find new medical treatments will normally be focussed on innovations that are likely to be utilised (obvious for private companies, but arguably also relevant for, e.g., altruistic doctors). Therefore, in the foreseeable future, we are likely to witness a continued predominance of cost-increasing new technologies. It is worth emphasising that it does not matter where in the world new technologies are developed, as they all quickly become available to, for instance, Swedish doctors. The largest markets have the strongest impact on technological change (in particular the US).

While the bias in terms of ignoring the cost side in the choice of treatments has been under attack across the OECD (with varying success) for several decades, the bias involved in disqualifying certain cost-reducing innovations is probably unaffected. Additionally, with a growing proportion of elderly in the populations, we can expect more innovations to be directed towards their health problems.

One factor behind the technological imperative is the ubiquitous presence of third party financing, which often is so structured as to leave both patient and doctor without incentive to consider the costs of treatment. For many years, retrospective cost reimbursement characterised much of the healthcare markets across countries. This typified both the US market with insurance companies that just picked up the bills, and public budgets with soft budget constraints (Kornai et al. 2003). The predominance of retrospective cost-reimbursement has abated, with Health

Maintenance Organization-type arrangements in the US, an increasing use of DRG payment schemes, and the introduction of capitation payment, financial incentives and quasi-markets in Europe.[20] However, in many settings, it is still the case that choosing the costlier option will have negligible negative effects on patient or doctor. This is arguably the best approximation of the situation in Sweden.

Furthermore, while several of these measures are aimed at restricting access to expensive treatments (gatekeeper systems) or attempting to ensure that they are used in a technically and allocatively efficient manner (DRG), they do not deal with the issue of whether a new expensive technology will be used at all. A more restrictive attitude could, however, be expected under capitation schemes (e.g., GP fund holders or global budgets with hard budget constraints).

It is obvious that individuals are willing to enter contracts which restrict their access to inpatient care (HMOs), and it seems possible that they would contemplate a contract that excludes them from some esoteric treatment for a rare disease. However, we find it unlikely that patients in industrialised countries would enter into contracts that entail a choice of treatments that are less likely to improve their health for a given diagnosis than other existing treatments (one may note that HMOs have suffered from declining popularity in the US (Folland et al. 2007, p. 245).[21]

It is often the case that a new technology is first tried on younger patients (probably on the presumption that the health gain is more uncertain for elderly patients, but also perhaps because younger patients are more active consumers, and in some cases due to an implicit prioritisation by age). However, this is often followed by a process of age diffusion, where utilisation of the technology is increasingly shifted towards the elderly (Dozet et al. 2002; Nystedt and Lyttkens 2003). For example, from 1982 to 1994 the mean age of patients undergoing bypass operations increased in Sweden by 1 year for each calendar year, from 54 years of age in 1982 to 65 years in 1994.

Furthermore, the speed with which information about new technologies spreads to consumers is increasing rapidly, in particular due to the internet. Hence, a Swedish patient who is not offered a particular treatment will quickly find that it is available in, for instance, Denmark or Germany. Despite current efforts to restrict the possibilities for Swedish patients to be reimbursed for elective treatments obtained in other countries (essentially it is required that the treatment is approved by the county council beforehand), we doubt that it will be politically feasible to maintain such restrictions, if access to significant technologies is not provided by

[20]A Health Maintenance Organization provides the entire healthcare needed in lieu of a yearly advance payment. This is also in principle a capitation system. DRG payments (Diagnostic Related Groups) represent a prospective reimbursement scheme in the sense that the amount a provider will be paid for a patient with a particular diagnosis is predetermined. However, the payment has come to vary with the intensity of treatment (McClellan 1997), making it less different from a fee-for-service system.

[21]In the important US market there is also a legal aspect. The provider is likely to be the object of liability suits unless the patient receives the best available technology (which again would mean the one that maximises health outcome, not the most cost-efficient one).

the Swedish healthcare sector. It would, for example, mean that more affluent patients could pay privately and thereby gain access to treatments that are unavailable to the majority of citizens.

Consequently, over time it would not be a politically feasible solution to provide less effective medical technologies in Sweden. Generally, this follows from the fact that current generations in Sweden have lived under the umbrella of the welfare state – with its emphasis on equity – for several decades, and it holds in particular as Sweden is a member of the EU with its declared goal of free movement of individuals and so on. Those who are entering into retirement from now on are also much more used to travelling abroad than previous generations.

We argued above that the ageing of the population will increase healthcare expenditure. In view of the importance of technological change for future healthcare costs, one could actually argue that the most important message from the literature on the effect of the ageing of the population is that it will *not reduce* healthcare expenditure and hence leaves us with the unmitigated consequences of technological change.

6.6 Non-solution Two: Institutional Change

In this section, we will discuss whether institutional change might serve to reduce the upward pressure on healthcare expenditure. We will assume that the aim of Swedish healthcare policy will continue to be to ensure good quality care for everybody, implying that healthcare should continue to be (mainly) publicly financed.[22]

Not wanting to sound unduly pessimistic, it is nevertheless worth noting that more or less "everybody" has been trying to achieve cost-containment in their healthcare systems over the past 25 years, and without much apparent success (though we do not know the counterfactual). Healthcare expenditure has continued to increase as a percentage of GDP; the apparent reduction in growth in the 1990s seems to have been temporary. So what is there to say that we would be more successful in the future? Furthermore, Sweden has relatively low healthcare costs as it stands – if we compare with OECD countries at similar income levels, eight of thirteen countries have higher per capita expenditure than Sweden (defining "similar income" as +/− 10% of GDP per capita, and adjusting expenditure levels on the assumption that the income elasticity is 1.0).[23] We also have to consider the fact that while healthcare in Sweden appears to be of high quality, it is not altogether easy to get access to it. There are

[22]Private financing would "solve" the problem with rising expenditures in the sense that private expenditures for healthcare can increase in a way that distortionary taxation cannot. The level of expenditure in, e.g., the US could still be seen as problematic, however, in the sense of representing considerable over-consumption at the margin (sometimes to the extent of being positively unhealthy). Cf. below on the distributional consequences.

[23]Data from *OECD in figures in* 2007.

substantial waiting times for seeing specialists, getting examined and receiving treatment; for example, waiting 90 days or more is common (Swedish Association of Local Authorities and Regions 2008). From this perspective, more healthcare is needed with current technology and demographical structure, not less.

When faced with excess demand for a heavily subsidised good, a natural reaction could be to increase the consumer price thus reducing the quantity demanded. The RAND Health Insurance Experiment showed that expenditure fell when patient fees went up, especially when comparing free care to a system of coinsurance, and that this only had minor consequences for the health of the insured (Manning et al. 1987; Newhouse 1993), though the latter point was not uncontested. It is important to note, however, that this was a cost reduction compared to the US fee-for-service system at that time. We do not know to what extent this experience is relevant for switching from not-insignificant to substantial patient fees in a healthcare system of the Swedish kind, where access is already rationed by queuing. Short run gains may also be overshadowed by belated, and therefore more expensive, treatments in the long run. We are similarly in the dark regarding the health consequences in a Swedish setting.

Any such measure is also likely to have distributional consequences that would be seen as problematic, as people with low incomes would be more prone to abstaining from seeking care. It is arguably politically unfeasible since most of the population have had their view of the world shaped by living in a welfare state (path dependency). To make the distributional consequences more acceptable, one could make the yearly cap on private healthcare expenditure proportional to income. In that case, however, it would add to the excess burden of taxation and therefore qualifies as a non-solution.

One could also consider excluding some treatments from public financing which are currently included in the public budget (Tinghög et al. 2010) or not including new high-cost treatments. This would lead to an increase in private financing (and private health insurance), and it would reduce the problem of excess burden. However, it is unlikely that this could be more than a partial and minor remedy, in particular in view of the fact that access to healthcare is in many cases already severely restricted in Sweden, as mentioned above. The same caveat with respect to distributional consequences as above also applies.

Turning to the supply side, an obvious question is whether incentives can be restructured and the situation saved by increasing efficiency in the production of healthcare. One could extend the use of private production, thus providing public producers with implicit yardstick competition. This would probably have beneficial effects (but cf. below on quality control). The effects may, however, be restricted to a one-time shift in cost level without affecting the long run trend in costs. Furthermore, in order to have full impact, such a system requires willingness to use real sanctions against badly performing public producers. The Swedish experience in this field is not altogether encouraging. There is a widespread reluctance to close down hospitals, and, for example, in the Stockholm area a substantial cost differential between the private and the public hospitals has been allowed to persist (Janlöv 2004). Studies on the efficiency of Swedish healthcare have failed to find an effect of the extent to which private production is used (Janlöv 2007; Gerdtham et al. 1999a, 1999b).

A policy of more general reliance on competitive markets in the production of healthcare would face several problems. Overall, countries that rely heavily on private production tend to have higher healthcare expenditures (although this could be due to other features that tend to go together with the use of competition among producers). The early US experience also showed that competition may focus on quality and thereby serve to increase overall costs, unless it is carefully managed from the buyer's side (Robinson and Luft 1987, 1988; Keeler et al. 1999). The Swedish market is small, and one might well end up with a mixture of local monopolies and oligopolies. It is also worth noting that the system of quality control is adjusted to a situation where producers have no direct financial incentives to skimp on quality. Fuchs (1999) is similarly pessimistic about the possibilities of achieving greater efficiency in the production of healthcare in the US.

A potentially more promising candidate would be to introduce an arrangement similar to the Dutch system. Starting off with a situation of local monopolies, competition among sickness funds was introduced, thus creating what on the face of it was relatively similar to Health Maintenance Organizations in the US. Once again, the RAND experiment showed that HMOs reduced costs (Manning et al. 1984); however, once again, this was in comparison with the fee-for-service system in the US. Alas, we do not know if it would reduce costs compared to a global budget system. The experience in the Netherlands also showed that this kind of competition does not necessarily have a major impact on the production of healthcare, at least in the short and medium term (Schut and Hassink 2002). Be this as it may, in any case we doubt that such a major institutional change will materialise.

It seems obvious that Sweden ought to attempt some experiments with institutional change on the supply side, in the direction discussed above, for example, more use of private alternatives and elements of competition. We believe, however, that these measures are unlikely to be given full force and that, even if they are successful, the impact will not be sufficient to solve the financial problems facing Swedish healthcare in the coming decades.

Overall, attitudes towards reforming the public healthcare branch of the welfare state in the direction of privatisation, market mechanisms, and private topping up of publicly provided services, have been mixed and varied, partly depending on political majorities in parliament and in the county councils. There have been a few attempts to privatise hospitals, but also a law (enacted and abolished) against privatisation of acute care hospitals. Free entry for GPs was introduced in the early 1990s, but was followed by a regulatory framework that enabled the county councils to decide on the establishment of private practices. At present, as mentioned above, the current majority in several county councils are contemplating free entry once again. The private insurance market exists as an alternative provision mechanism, focussed on shortening the time to treatment, rather than a topping-up feature (privately financed patients are normally not treated in public hospitals).

By and large, there is arguably no clear long-term trend in the healthcare sector towards fundamental organisational reform, nor any widespread conviction across political groupings that such reform is necessary (in contrast, minor organisational

reform is a ubiquitous phenomenon[24]). In this respect, the healthcare sector "lags behind" not only the pension system but also the provision of long-term care. In general, there are often considerable vested interests among decision makers in retaining the essentials of the institutional structure, and huge investments in the organisational set-up. If reform is even less likely in healthcare, one may speculate that this is due to a greater reluctance among decision makers in this area to take explicit responsibility for a major systems reform, possibly because at least some of those who utilise healthcare are more vocal in the political arena than those who consume, for example, long-term care.

6.7 Non-solution Three: Explicit Priority Setting (or Do We Believe in the QALY and Nothing but the QALY?)

It has long been noted that economic analyses of the cost-efficiency of different treatments have largely been ignored in public policy. This, however, is changing. Most notably in the area of pharmaceuticals, many countries (including Sweden) now require data on the cost-effectiveness before new pharmaceuticals are approved for public subsidies. Furthermore, the Swedish National Board of Health and Welfare is issuing guidelines for priority setting in the healthcare sector, based on three ethical principles, taken by the Swedish parliament in 1997. One of the principles is cost-effectiveness, but both the human dignity principle and the need or solidarity principle are ranked higher.

An important construct in health economic evaluations is the Quality Adjusted Life Year (QALY). This is a measure that combines effects on life expectancy and on quality of life. Quality of life is measured on a scale from 0 (death) to 1 (perfect health). The number of life years gained is multiplied with the relevant quality of life under those years so that, for example, 5 years with a quality of life of 0.8 would be equivalent to 4 QALYs gained (and equal to 4 years in perfect health). The guidelines of the National Board of Health and Welfare suggested, for example, a few years ago that a cost of 100 000 SEK per QALY is "low" while a cost of 500,000–1,000,000 SEK per QALY is "high" (Jönsson et al. 2004, p. 128).

It has been argued that it is an advantage with the QALY approach that a QALY is given the same value irrespective of who receives it. It has also been criticised for precisely this property, as it ignores distributional considerations such as the health status of different patient groups. With respect to healthcare for the elderly, the important point here is that the QALY approach clearly implies that, *ceteris paribus,* it is more cost-effective to save the life of someone who is 60 years old than someone who is 80 years old. Hence if such cost-effectiveness criteria are

[24]Among economists, this – though undoubtedly well-meant – is often viewed as a reflection of the fact that a politician, faced with dissatisfaction with queues etc, has to be seen to be doing *something*.

implemented, it is likely that diseases that typically appear among the elderly would receive lower priority than they do today.[25]

However, if need is interpreted as health status, which seems to be in line with the government report on priority setting (*Vårdens svåra val*, SOU 1995, p. 5), then the (higher ranked) needs-principle suggests that persons suffering from similar health problems should be given equal priority (irrespective of years left to live). Finally, whether different county councils actually will follow the recommendations of the National Board of Health and Welfare is an open question – experience shows that the county councils often ignore explicit or implicit agreements with the central government.

Furthermore, if we accept the Fair Innings argument proposed by Alan Williams (1997), we should give low priority to those who have aged past the average life-expectancy at birth (in the country of birth). In Sweden this would mean low priority for those aged above 79 (men) or above 82 years (women). However, we doubt that such a principle would be accepted in general and by the elderly in particular as a consistent policy.

Individuals adapt to having health problems and report a relatively high quality of life even if they suffer from, for instance, chronic diseases. From this point of view, one might think that it would be possible to ignore certain healthcare needs among the elderly. However, that would be a mistake. The literature on happiness suggests that happiness can be a relative thing and that it often is determined by your outcome *in relation* to your expectations/aspirations (Frey and Stutzer 2001). And people would arguably expect that all health problems are treated similarly and irrespective of the age of the patient; hence the elderly would become decidedly unhappy if their healthcare needs were ignored.

6.8 Towards a Non-non-solution (or Simulating to Have an Answer)

So, healthcare expenditures will continue to be high and continue rising, and the elderly will not be given low priority. This leaves us with the issue of financing these high expenditures. Above we have found some partial remedies, but these are hardly sufficient. Increasing distortionary taxes is a non-solution (as argued in Chap. 3).

In practice, countries like Sweden which rely on tax financing of the healthcare sector apply a PAYG system: the currently economically active population pay for the healthcare of those who have retired. In theory, one could switch to a funded system, which would mean that individuals would have to purchase health insurance when they are young to secure healthcare later in life. The minor problem here is that it is unlikely that this will be offered on the market given the uncertainty

[25]This is a conjecture, as we know very little about the incremental cost-effectiveness of current medical practices and its relationship with the current but mainly implicit priority-setting process.

surrounding future levels of expenditure as General Motors is finding out in the US. The major (political) problem is that it would only represent a solution if one generation can be persuaded or forced to pay twice. Reasonably, it is the 1940s generation that would have to pay twice, which is an unlikely political outcome, given the size of those cohorts.

Our guess, however, is that if the question was posed in a referendum, a majority of citizens would at the margin prefer more healthcare to several other publicly financed activities, and the same is probably also true of private consumption. The issue is whether it is possible to re-allocate resources in a way that meets with a reasonably high degree of political and individual approval.

In other words, it is not an issue of whether we can afford healthcare if we choose to. The issue is whether we can find an institutional structure that can allocate the resources to healthcare without unacceptable distributional consequences and without destroying other important mechanisms in society, such as the market economy, democracy and so on.

Any actual payment mechanism inevitably runs into the difficult trade-off between undesirable distributional consequences and the deadweight loss of distortionary taxation (fixed patient fees vs. varying with income, etc). Perhaps the best way would be to use relatively non-distortionary taxation, such as per capita taxes or taxes on real estate in Sweden.[26] In ancient Greece, it was considered a neat idea to levy per capita taxes on foreign residents, and let the citizens off (Lyttkens 1994), but today we may find it advantageous to use that kind of taxation on the citizens themselves instead. If this sounds difficult, it might perhaps serve as an incentive to identify some items in the public budget that could be tackled in order to re-allocate resources to healthcare.

The discussion above happily ignores one intriguing problem with Swedish healthcare, which is the fact that three levels of government – central, regional (county councils), and local – all are involved in financing and organising healthcare for the population, and without clearcut limits regarding their responsibilities and authority. Hence, an action taken at one level may trigger reactions at other levels that counteract the original intentions. Perhaps this is the feature of Swedish healthcare where the need for an Alexander is the greatest.

The perspective in this chapter is one of consciously trying to manipulate the future. Whatever we do (including doing nothing), we are likely to be surprised by the development. Unforeseen consequences are a ubiquitous feature of human life in general and well-meant public policy in particular.[27] Murphy's Law also springs to mind. Perhaps one should point out the obvious fact that there will always be a solution; healthcare will continue to be produced and consumed in huge quantities. If one was to hazard a guess on the likely development, it would be that it entails

[26]A per capita tax is less problematic the less people move to other countries (jurisdictions for tax purposes). Hence it will probably become more problematic over time in Sweden, in which case we may have to think in terms of a healthcare policy for the EU.

[27]Merton (1936), North (1990, p. 104), and Smith (1776/1976), III. IV.17 and IV. II.9 (pp. 422, 456).

muddling along, with obfuscation and equivocation (Coast 2001) as major guiding principles. Across border shopping will increase, with demands for public reimbursement, as will private health insurance. Social inequalities in health and healthcare consumption will increase, but the median voter (the middle class) and the more affluent will manage relatively well in view of their financial assets and human capital.

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Chapter 7
Towards a New Swedish Model?

Andreas Bergh

Abstract The Swedish welfare state has always attracted interest among welfare state scholars, and it has been labelled universal, social democratic and institutional – among other things. Since 1980, however, the Swedish welfare state has been altered and reformed in several ways. Taking a very strict view on what the Swedish model entails, the model is arguably dead. Still, most welfare state scholars agree that despite some cutbacks, Sweden remains a universal welfare state, and the reforms have been described as liberalization without welfare state retrenchment.

Most likely, public commissions have served as early warning systems, providing valuable information to decision makers and facilitated the creation of political consensus. The pension reform is the paramount example, but it remains to be seen whether similar reforms will be implemented for healthcare and elderly care.

7.1 Introduction

Sweden and the Swedish welfare state have always attracted interest among social scientists in general and among welfare state scholars in particular. The Swedish welfare state is typically labelled universal, social democratic, institutional, encompassing, Nordic or Scandinavian. Without doubt, the variety of labels is confusing, and Abrahamson (1999) notes that classifying welfare states has become a business of its own. In Bergh (2004), I demonstrate that Sweden is often mentioned as a chief example of a universal welfare state, though the exact meaning of the concept is largely ambiguous. Nevertheless, despite all vague definitions and ambiguities, there is a consensus that the high degree of state involvement in the life of all

A. Bergh
Department of Economics, School of Economics and Management, Lund University, Scheelevägen 15B, 223 63 Lund, Sweden
e-mail: andreas.bergh@nek.lu.se

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citizens – from the cradle to the grave – separates Sweden and the other Nordic countries from most other countries in the world.

Since 1980, and especially during the 1990s, the Swedish welfare state has been altered and reformed in several ways. Welfare state scholars have since been debating whether the Swedish welfare state has lost its defining characteristics or not. Clearly, several welfare programs were substantially changed, including those intimately connected to demographic factors, such as pensions, elderly care, schooling and childcare. But were these changes large enough to transform the Swedish model into something else? And what do the coming demographic challenges imply for the Swedish type of welfare state?

The upshot of this concluding chapter is the following. If one takes a very strict view on what the Swedish model entails, the model is already dead: reforms have been substantial, as documented by for example Marier (2005), Blomqvist (2004), and Anderson (2001). Sweden around year 2000 was very different from Sweden around 1980. With only a slightly broader definition, however, the Swedish model is arguably still going strong: Bergh and Erlingsson (2009) describe the Swedish reforms as liberalization without welfare state retrenchment, and – as shown by the contributions in this volume – the reforms needed in the future to handle the demographic challenge are likely to be of similar nature.

7.2 The Swedish Model So Far

A simple yet informative way to think of welfare state categories is the following: all countries must handle the two fundamental tasks of smoothing consumption over the lifespan and providing insurance against various risks.[1] All countries rely on a combination of three institutions for these tasks: the state, the market and the family. Liberal or Anglo-Saxon welfare states rely somewhat more heavily on the market, conservative or continental welfare states rely more on the family, and the Social democratic/Nordic/universal welfare states rely more on the state (Fig. 7.1).

More specifically, the universal welfare state refers to states where all citizens are entitled to a number of welfare services and benefits (highly related to the two fundamental tasks mentioned above) regardless of their ability to pay and regardless of several other characteristics (see Bergh 2004). In a specific demographic context, Trydegård (2004) is representative, describing the Swedish model for elderly care as universal, extensive, equal and equitable. The Nordic welfare model is said to consist of publicly financed and provided social service directed to, and used by, all without means testing or requirements for labour market affiliation. Home-care has been an important feature.

A similar reasoning holds for the pension system: Edebalk (2000) describes how Sweden already in 1913 introduced the world's first universal pension system. This

[1]These risks include the risk of living longer than expected without having sufficient savings, which is the risk handled by a pension system.

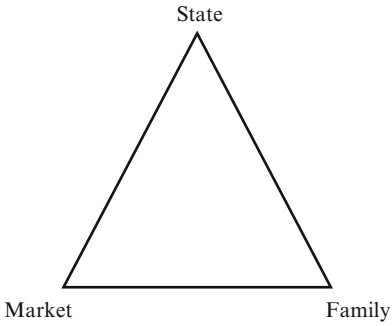

Fig. 7.1 A framework for classifying welfare states

Table 7.1 Total public social expenditure as a percentage of GDP

	1980	1998	2003
Sweden	28.6	30.5	31.3
OECD-average	17.4	19.6	20.9

was followed by the ATP-system in 1960 and the reformed system in 1994 (see, Chap. 4).

The early 1990s was a turbulent period for welfare states in general and especially for Sweden. With its high taxes, the public budget is extremely sensitive to fluctuations in economic activity, and when growth was negative for three consecutive years 1991–1993, the budget deficit rose to an alarming 13 percent of GDP. Was this the beginning of the end for the characteristic Swedish welfare state? Perhaps surprisingly, the answer seems to be no – but this conclusion is admittedly controversial. Since the mid-1990s, the Swedish economy has made an impressive come back: growth has returned and the public budget is in balance. But what has happened to the welfare state?

Using aggregate measures of welfare state size, the Swedish welfare state has not only survived but actually kept growing: Castles (2004) uses OECD-data on total public social expenditure to examine the development of welfare states over time, and finds no evidence of retrenchment. Castle's data stops at 1998, and to verify that Castle's conclusion has not recently been falsified, I have extended his data series with updated data from OECD's Social expenditure database (Table 7.1).

The ratio of social expenditure to GDP is a very crude measure. But several detailed case studies support the conclusion of welfare state resilience in Sweden: Bergqvist and Lindbom (2003) note that after the crisis of the 1990s and after the cutbacks, replacement rates have been raised again, and the expenditure on needs-tested social assistance has declined. They also note that Swedish healthcare to a larger degree than in other countries remains publicly financed.

Bergh (2004) constructs several possible indicators of welfare state universality and evaluates these over the 1990s to conclude that universality in Sweden was roughly constant during this decade. Rothstein and Lindbom (2004), however, note that on a number of indicators there is a clear trend from the universal model towards a more market-conforming 'liberal' welfare model. They add, however,

that the changes in a liberal direction are not significant enough to transpose the original model, and also that after the immediate economic crisis was over in 1998 new reforms have restored some of the things that were changed.

Lindbom (2001) notes that Sweden's major attributes when compared to other countries are almost as prominent after the crisis as before. The attributes referred to are generosity, universality and developed welfare services. Timonen (2001) studies Finland and Sweden and notes that while there have been changes, these have not been systemic and have not seriously undermined the provision of welfare state services. Szebehely (2000) describes changes in the old-age care during the 1990s. The conclusion is that services and care are still to be guided by the principles of the Scandinavian model for social policy, according to a parliamentary decision of 1998. This implies that services be publicly funded and distributed according to needs, not means.

There are, however, more critical voices. De Deken (2002) compares Belgium and Sweden as being representatives of a Christian democratic welfare state model and a social democratic one respectively. He argues that the Swedish model has become less representative for the social democratic welfare model after the reform of the pension system. Blomqvist (2004) notes that despite the aggregate resilience indicated by data like those in Table 7.1, privatization and market orientation in social care (the so-called choice revolution) has undermined the Swedish model.

Focusing on care for elderly, Trydegård (2004) concludes that although the national policy and legislation have remained roughly the same, old-age care has undergone substantial reorganisation and reconstruction. In Sweden, the supply of home care has decreased significantly and the number of institutional beds has not increased with the same pace as the number of elderly people. After the "ÄDEL-reform" in 1992, the operational responsibility rests with the local authorities/municipalities. Hence, the quality of care and service may differ between municipalities. In fact, Trydegård and Thorslund (2001) suggest that the variations in elderly care between municipalities are so significant that it is more relevant to discuss "welfare municipalities" rather than a single welfare state.

Similarly, in a comparison between Sweden and Germany, Theobald (2003) notes that the number of elderly people receiving services decreased significantly in Sweden during the 1990s, mainly because of new rules on the municipal level. Families are encouraged to take a greater responsibility for the care of their elderly. Wealthier people can buy services while the less wealthy are more dependent on the good will of their families. An increasing professionalization can result in social service of high quality but also in limited access for receivers of care.

To summarize, what we see is a mixed picture: The degree of state involvement in life cycle redistribution and risk insurance is still high in Sweden. Benefits are still provided universally in the sense that economic means testing has not increased. Taxes and social expenditure in Sweden remain among the highest in the world. On the other hand, the reliance on market mechanisms has increased.

The pension system is now partially funded, and in elderly care more responsibility is put on families.

It is fair to say, however, that most welfare state scholars agree with the careful conclusion that while there indeed were some cutbacks during the 1990s, Sweden still remains a social democratic or universal welfare. There seems to be some movement away from the state towards both the market and the family. Importantly, however, for most welfare services, the latter two institutions serve as complements, not as substitutes, to the state.

We thus conclude that the Swedish model has survived so far, with the added remark that the market and the family nowadays are more common complements in welfare provision than they were before the 1990s. But what about the demographic challenges ahead?

7.3 The Demographic Challenges

Scott and Bengtsson (see, Chap. 2) discuss the demographic challenges that the Swedish model must handle. Clearly, the biggest challenge comes not from increased longevity but rather from the transition that has occurred from high to low fertility. At least two things must be made clear regarding this transition.

First of all: To what extent is it intrinsically problematic that fertility falls? From some normative positions it may be troublesome that population growth decreases and even becomes negative. For economists however, it seems more natural to view behaviour as revealing preferences, and thus to conclude that as society grows richer, we prefer having fewer but more highly educated children. In this case, the problem is not that fertility falls, but rather how to handle the transition from high to low fertility rates.

Secondly, it needs emphasizing that the transition from high to low fertility poses a challenge for *all* countries, regardless of whether they rely mainly on the market, the family or the state for welfare provision. The difference is the mechanisms used for the transition. Market-based systems use market prices and adjustments through supply and demand, whereas state-based systems operate through political decisions.

While the distributional outcome from market mechanisms may be less desirable, market prices contain valuable information regarding preferences, costs and scarcity. In state-based systems, this information channel is not available, and the success of universal welfare states will crucially depend on the possibility to find substitutes for such information-generating market processes. As we shall see, social science and public commissions may function as such a substitute.

In a high fertility society, the demographic structure is akin to that shown in Fig. 7.2a. When fertility drops, we get a shape similar to that in Fig. 7.2b. This is problematic because the number of old people to be supported is generated by high fertility, while the number in working age is generated by low fertility.

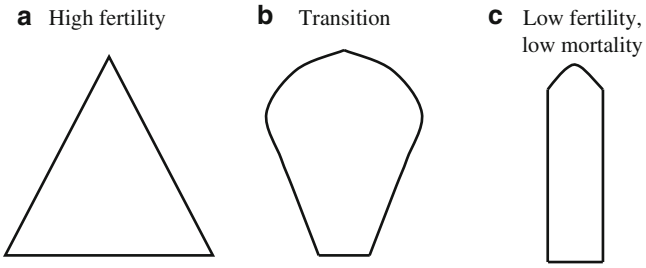

Fig. 7.2 (**a–c**) Demographic structure before, during and after the transition from high to low fertility

When fertility rates stabilize at a lower level, the structure will look similar to Fig. 7.2c, a cylinder of increasing height due to population ageing, and possibly a shrinking width if fertility remains below replacement level.

Thinking about the demographic challenge in terms of Fig. 7.2a–c is useful because it shows that if fertility remains low, we will never return to the situation in 7.2a, where pensions and elderly care is made easier by the ever increasing workforce. It also shows that the most problematic situation in Fig. 7.2b is of transitional nature, and that there is some alleviation from the fact that the number of young to be supported also is decreasing. This also shows that if fertility increased again, more children would actually worsen the balance for a period of ~20 years before they are ready to enter the labour market.

Bengtsson and Scott (see, Chap. 2) conclude that two solutions remain: mobilizing the potential workforce so that a greater share of those of working age actually work, while another solution can be found in pushing the retirement age higher in response to longer life expectancies.[2] Can the Swedish model accomplish this?

The new pension system implies that at least to some extent, measures have been taken to increase the retirement age. Compared to the old system, the economic incentives to retire later have been substantially strengthened, and there is room for some optimism. For example, Horngren (2001) argues that Sweden is well prepared to meet the demographic transition, by having taken actions at an early stage.

When it comes to old-age care, there is no clear equivalent to the pensions reform – but municipalities have been experimenting with market mechanisms and customer-choice since the early 1990s (see Edebalk and Svensson 2005). As shown by Edebalk (see, Chap. 5), more needs to be done, and a national insurance system could be a possible solution.

Bergh (2008) discusses how the policy makers in universal welfare states have tackled the challenges from demography and increased mobility of labour and capital so far. In short, universal welfare states can survive if they manage to

[2]Immigration is not a sufficient solution. As Bengtsson and Scott show, many arguments regarding immigration are true – but the magnitudes are such that immigration can never substantially change the demographic structure.

avoid a situation where net-payers, capital and corporations leave the country (as discussed in Chap. 3), while at the same time avoiding that the strategic middle-class voters turn their back on the welfare state and start demanding substantial tax cuts. Handling these issues, and at the same time tackling the demographic challenge, is not an easy task. It is in fact very easy to paint a gloomy picture of the future for the Swedish model. But the conclusion in Bergh (2008) is that Sweden is in fact well on its way, using at least some of the following measures:

- Restructuring the tax system towards lower progressivity
- Tying benefits closer to taxation
- Increasing work incentives
- Increasing reliance on private topping up of public consumption and social insurance
- Increasing freedom of choice through voucher systems
- Increasing efficiency through competition-enhancing reforms

It is changes like these that make some scholars conclude that the Swedish model has lost its defining characteristics. But changes like these also imply that working and paying taxes in Sweden is made more rewarding – especially for the middle class upon whose support the universal welfare state crucially depends (see, for example, Korpi and Palme 1998; Bergh 2007). Thus it is possible to argue that changes such as these are part of an explanation of what Rothstein and Lindbom (2004) call the mysterious survival of the Scandinavian welfare states.

Consider, for example, the case of topping up – allowing citizens to add private funds to the public funding of welfare services. Due to the demographic challenge, only maintaining current per capita levels would require higher taxes, and it is even more difficult to publicly finance the level demanded by high-income owners universally for the whole population. Thus, politicians must make a choice between allowing citizens to top up public funds with private money, or having citizens pay twice in order to attain the level of services they prefer – once by paying taxes, and once again to a private provider if topping up is not allowed.[3] Naturally, we expect welfare state support to decrease among those who feel that paying twice is the best way to attain a desirable level and quality. This has also been verified empirically by Hall and Preston (1998) who showed that people who opt out from publicly provided healthcare and pay for private health insurance support less spending on the public system. Today, topping up is common in Sweden's elderly care, as well as in the pension system, where people complement the public system with private savings and occupationally negotiated schemes.

The strategy seems to have been successful so far in the sense that public support for public welfare expenditure in Sweden has been constantly high and possibly increasing during the period from 1981 to 2002 (Svallfors 2004). As expected, groups with higher incomes report lower welfare state support. But welfare state

[3]Recently, public policy documents show that policy makers are indeed discussing the strategic choice described here (see the Swedish Långtidsutredningen 2003/04, SOU 2004, p. 19).

support is constant or increases over time for each socio-economic group. Without reforms, we would most likely have seen decreasing support for the welfare state among high-income earners. Instead, as a result of gradual adaptation, high-income earners, the highly educated and the relatively more mobile groups have benefited from several reforms, resulting in maintained political support for the welfare state.

Interestingly, market-oriented welfare state reforms in Sweden were often supported or even initiated by social democrats (Klitgaard 2007; Bergh and Erlingsson 2009). It seems reasonable to ask how it was possible to implement these changes. Due to factors like path dependency and interest groups, substantial reforms in mature welfare states are not to be expected (see Pierson 1994, as well as, Chap. 5).

Sweden, however, has a different style of policy-making compared to other countries. This style of policy-making was documented repeatedly over 30 years ago, by Anton (1969), Elvander (1972) and Castles (1976). Policy-making in Sweden is known to be particularly rational, pragmatic and consensual. Public commissions and interest groups play an important role and, in general, decisions are not made hastily. This style of policy-making helps to explain both the development and the reform of the Swedish welfare state.

For example, as pointed out by Esping-Andersen (1994), the 1913 pensions reform originated from investigations that started already in 1884. This reform was in turn the origin of the universality principle, because the pension insurance established encompassed the entire population. When viewed from this perspective, the pensions reform in the 1990s is no exceptional event, but rather a reform that fits the pattern. It can, in fact, be seen as a compromise between the main alternatives put forth in the 1957 referendum on ATP: it is mandatory, partially funded and partially pay-as-you-go (again, Chap. 4 for further details). As demonstrated by Bergh and Erlingsson (2009), the description of Anton (1969) holds up surprisingly well also for other market-oriented reforms in the 1980s and 1990s – the reforms were often the result of broad public commissions.

The role of public commissions in adapting the welfare state to changing circumstances is crucial. Once a government commission is working, the forthcoming political debate has to a large extent already been defined. Often, each political party has a member in the investigation, where they intimately interact with representatives from other parties, and – importantly – with social scientists, civil servants and representatives from central interest groups.[4] These commissions typically give prominence to expert views on the subject matters, and at the same time they provide an arena that stimulates deliberation between opposed interests. The experts define problems and propose ideas about solutions. The commissions are arenas where opposed interests, in dialogue with experts, can reach agreement. If the commissions contain proposals, the party representatives may add special comments, which mean that the debate is likely to be focused on these details.

[4]For example, see Marier (2005) on the important role played by bureaucrats in the Swedish pensions reform.

The commissions also serve as an early warning system. As noted by Kruse in this volume, the transition rules for introducing the new pension system in Sweden were central for establishing political support for the reform. As shown by simulations in Selén and Ståhlberg (2007), political support for the Swedish pensions reform decreases as the decision is postponed. Had Sweden not initiated the first commissions already in 1984, it would most likely have been much harder to establish broad political support for a fundamental reform.

Together, these factors contribute to a pragmatic, technocratic and rationalistic policy style, which so far has been crucial for handling the demographic challenges.

The Swedish model, however, is not off the hook yet. As demonstrated by Lindgren and Lyttkens (Chap. 6), there are several non-solutions to the problem of future healthcare financing and still no clear solution. When it comes to healthcare reform, Sweden's results so far are nowhere near as impressive as regards the pension reform. Lindgren and Lyttkens suggest that a possible explanation for this is the fact that three levels of government are all involved in healthcare without clear-cut limits to their responsibilities. Given the background of policy making Swedish style, as described in Anton (1969) and Bergh and Erlingsson (2009), it is difficult not to agree.

7.4 Concluding Discussion

The one-size fits all, and homogenous, Swedish welfare model is arguably dead. But in many respects, the model lives on. The most important welfare services during the life cycle are still publicly funded to an extent that separates Sweden from most other countries.

As an example, the Swedish pensions reform is illuminating. Depending on what features of the new system are emphasized, the reform can be described both as a sign of Sweden rolling back the welfare state – and as a triumph for democratic welfare capitalism. A proper evaluation of the reform is hard to carry out, because we know nothing about what would have happened in the counterfactual case where no reform was undertaken. For example, one must be careful not to compare the pension outcomes in the new system with the promised outcomes of the old system. A major reason for reforming was in fact that, due to demographic changes, the old system would not have been able to deliver the pension levels that were promised. People retiring earlier and living longer are changes that inevitably must affect all pension systems. The new system allows people, in a relatively transparent way, to make their own trade-off between retirement age and pension level.

As shown by Kruse (see, Chap. 4), if people accept to postpone retirement from around the age of 65–67, benefits will not decrease due to increased longevity – but the number of years as a pensioner will still increase. This is hardly a case of rolling back the welfare state. On the other hand, it remains to be seen whether similar reforms will be implemented for healthcare and elderly care.

Oppenheim (1997) summarizes the development towards a new type of universal welfare states:

> Finally, universal welfare state services are the cornerstone of the post World War welfare settlement. Universalism remains important. [. . .] However, welfare policies have to create unities of interest between the majority and the poor within a context of sharpening inequalities. Thus, it is not the universalism of the 1940s, but one which allows for diversity and combines universal membership and individual autonomy. It would open up the possibility of different contributions for different benefits and the tailoring of services for a variety of needs. Above all it promotes inclusion over and above strict equality in order to retain broad public support.

The system of public commissions can be interpreted as a substitute for the information generated by market processes. Commissions can serve as early warning systems to provide valuable information to decision makers and, as explained above, they also facilitate the creation of political consensus. In this perspective, it is interesting to note that the Swedish National Audit Office (Riksrevisionen 2004) has identified a new and problematic trend in the Swedish commission system: lack of time and insufficient research contacts. If this trend continues, the Swedish model may run into trouble not because of the demographic challenges but because policymakers will lack information about their nature and how they can be tackled.

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