Volume Title: Social Security Pension Reform in Europe

Volume Author/Editor: Martin Feldstein and Horst Siebert, editors

Volume Publisher: University of Chicago Press

Volume ISBN: 0-226-24108-4

Volume URL: http://www.nber.org/books/feld02-2

Conference Date: March 20-21, 2000

Publication Date: January 2002

Title: Swedish Pension Reform: How Did It Evolve, and What Does It Mean for the Future?

Author: Edward Palmer

URL: http://www.nber.org/chapters/c10673

6

Swedish Pension Reform
How Did It Evolve, and What Does It Mean for the Future?

Edward Palmer

6.1 Introduction

Mandatory public pension systems constitute a large and important public commitment to the aged. They are typically constructed on the pay-as-you-go (PAYGO) principle and are designed to provide a defined benefit from a specific pension age—in countries in the Organization for Economic Cooperation and Development (OECD), this is typically age sixty-five. In practice, the actual age at which individuals leave the labor force is much lower due to older workers' high take-up of disability and occupational benefits. Not infrequently, mandatory public or occupational benefits provide little opportunity to combine work with a benefit, and as a result, older workers must choose between being in or out of the workforce. At the same time, PAYGO systems are being threatened by increasing costs due to increasing dependency ratios.

The financial instability of PAYGO systems can be resolved by changing system design to encourage a higher ratio of years of work and contributions to benefit years. More generally, pension systems should be actuarially neutral in individual choices between work and leisure. They should not be designed so that they effectively tax those who choose to work longer, although systems in the OECD presently do this very thing (Gruber and Wise 1999). An advantage of defined contribution (DC) systems over defined benefit (DB) systems is that they are actuarially fair. Beginning with the mandatory public system and followed by major occu-

Edward Palmer is Professor of Social Insurance Economics at Uppsala University and head of the division for research and development at the National Social Insurance Board in Sweden.

The author is grateful to Laurence J. Kotlikoff and the editors for comments.

pational schemes, Sweden converted its earnings-related schemes from DB to DC in the 1990s. The process and implications of this process for future benefits and financial stability are the topics of this paper.

Most OECD nations' pension schemes originated during the 1930s or later. Since that time the nature of the labor market and the character of work and the workplace have changed dramatically. Health has improved vastly due to improvements in medical technology, lifestyles, and working environments. As a result, longevity has been increasing by about one year for every ten years that pass, and is expected to improve at least at this pace in the coming century. In spite of this, male workers worked fewer years in the mid-1990s than they did in the mid-1970s. In the mid-1990s, workers in most of the OECD worked only four to five years after the age of fifty-five, while life expectancy from age sixty was eighteen to twenty years, depending on the country (Palmer 1999b). In the next quarter-century, life expectancy from age sixty will rise by at least another two to two and one-half years if it simply follows the trend of the past half-century. Some believe that improvements in medical technology will lead to a more spectacular change.

At the other end of the life span, people are devoting more time to schooling, which leads to later entry into the workforce. If present trends continue, individuals entering the workforce now will work about thirty-five years and will be pensioners for about twenty-five years. The DB systems of the OECD countries were not designed for this environment, but for one in which the typical worker entered the workforce at about age twenty and worked into his or her sixties (i.e., more than forty years), with a life expectancy from age sixty of about fifteen years. No wonder we see so many pension systems in crisis when we examine what is in store in the coming twenty years (see, e.g., Disney 1999).

Should countries continue with PAYGO systems, or do individual financial-account systems provide a better alternative? Defined contribution systems with full advance funding, by definition, deal with demographic risks: Individual rights depend on individual contributions and life expectancy is factored into the individual annuity. This has led many experts and politicians to the conclusion that a complete or large-scale transition to full funding is the best path for the future. Countries in the OECD have been reluctant to make this transition, however, due not only to the high initial cost for the transition generation, but also to the financial risk involved. The potential advantage to the transition generation would be that the return on financial accounts would surpass the tax required to implement the transition. Future generations would gain if the rate of return on financial assets continued to surpass the rate of economic growth.

The final tally on whether any generation will end up as winners or losers in terms of future rates of return, all else being equal, requires us to have the facts in hand. In fact, neoclassical wisdom as initially formulated

by Samuelson (1958) and Aaron (1966) suggests that all the clothes may come out the same color in the end—yet they are not all the same color in the beginning, or even during the whole wash, as history has shown us. If rates of return were to remain at their average levels of the past half-century for another half-century, and if individual funds obtained an index return at this rate, then the prophecy of the proponents of funding (e.g., Feldstein and Samwick 1997) would come true.

On the plus side of the account for more advance funding stands the conventional wisdom that it is not wise to put all one's eggs into one basket. A mixture of PAYGO (with its dependency on economic growth) and funded (with financial returns) systems could be the best medicine of all. For example, the Polish reform has recently been implemented under the banner of security through diversity (Góra and Rutkowski 1997). Elsewhere in Eastern European, Hungary (Palacios and Rocha 1998) and Latvia (Fox and Palmer 1999) have taken similar steps. The Swedish reform, which is the focus of this paper, moved in this direction with the 1994 reform legislation (see Palmer 2000 for a more detailed discussion), although the step is smaller than in these Eastern European countries. In Europe, Italy (e.g., Castellino and Fornero 1999) and Germany (e.g., Börsch-Supan, chap. 5 in this volume) are discussing ways of introducing or promoting individual financial accounts. In the reform debate in the United States, increased advance funding has been one of the main alternatives discussed.

In Sweden, the discussion moved in the direction of lifetime accounts in the early 1990s. Official actuarial calculations presented by the National Social Insurance Board (Allmänna Tilläggspension [ATP] 1987) showed that the old DB system was financially unsustainable with low economic growth and continued improvements in longevity. In addition, for a long time it had been considered desirable to find a way to move the large buffer fund in the public system into the private financial market. It had been clear for some time that individual financial accounts with contribution-based rights would be a way to do this. It was also clear that in the coming quarter-century, public (demographic reserve) funds would be needed to help the retirement of baby boomers born in the 1940s, as well as to buffer future demographic cycles.

Three principles emerged in the reform discussion in Sweden: First, benefits should be based on contributions from lifetime earnings. Second, indexation should be based on the growth of the contribution wage base. Third, annuities—even in the PAYGO system—should reflect changes in life expectancy. These principles were put together in the concept presented by the government's Pension Reform Group in 1992, and with this Sweden's notional defined contribution (NDC) PAYGO scheme emerged in print. The idea of NDC, which had been around conceptually in the economic literature since Buchanan (1968), was given a face for the first

time. In addition, the 1992 concept called for individual financial accounts for a segment of the system, although the actual scale of the financial account system was left open at that juncture.

In 1994, Swedish Parliament passed legislation on an NDC PAYGO first pillar, supplemented by a second pillar with privately managed individual financial accounts. One year later (in 1995), the Italian Parliament passed similar legislation (see, e.g., Tumbarello 2000 for a description). The ideas and their construction in the Italian and Swedish legislation are similar, although the Swedish transition into the new system is much faster,[1] thus avoiding the need for further reform for financial purposes.

The details of the Swedish reform are available from many sources.[2] In this paper I will focus on how the reform evolved and what it means for individuals and for society at large. The whole reform package in Sweden represents in my mind a paradigm shift in thinking about public pension provision, and to examine how the Swedish reform evolved is a valuable exercise in itself. The NDC idea spread quickly, first to Latvia and Poland, then to a number of other countries perhaps leading one to ask, What is so enticing about this PAYGO system? In my mind, what is new is that it is a *thoroughbred.* It goes all the way in introducing defined contribution into the PAYGO framework.

The NDC PAYGO system with lifetime accounts, the appropriate indexation, and annuities based on life expectancy move the system in the direction of advance-funded systems when it comes to dealing with risk (as discussed in Palmer 1999). What remains different compared with advance funding, needless to say, is the potential difference in rates of return and possible differences in the impact on savings and growth. The reform of the PAYGO system also opened the door in Sweden for individual financial-account DC schemes within occupational schemes, and this is the path they have begun to take. Generally, it can be argued that the paradigm shift embodied in the Swedish reform is well suited to meet the foreseeable future. One of the aims of this paper is to give the reader a better understanding of why this can be the case.

6.2 Overview of the Reform

Sweden has combined NDC PAYGO with a mandatory and universal advance-funded DC component, with a total contribution rate of 18.5 percent. Due to the DC design of the public system, participants can expect

1. In Sweden, persons born in 1938 will receive 20 percent of their benefit according to the new rules and 80 percent according to the old rules. The percentages for persons born in 1939 are 25 and 75 percent, respectively, and so on through persons born 1954, who receive the entire benefit according to the new rules. Persons born between 1946 and 1953 will receive more than half their benefits from the new system.

2. Extensive overviews of the entire reform are available from [http://www.pension/nu] and [http://www.ppm.nu].

this contribution rate to remain unchanged in the future. This shifts the risk of financing benefits from future to current workers. Because annuities in both systems are directly related to increasing longevity, there are actuarial advantages to working longer. There is no longer the "full-benefit" age that is typical of many OECD public DB schemes. Individuals may continue to work and contribute to a higher lifetime annuity as long as they desire. The reform also abolishes the special tax credit for pensioners, and puts pension income on an equal footing with earnings.

Both components of the public scheme are based on individual lifetime accounts; the difference is that in PAYGO system, accounts are not financial but notional (in the sense that there is no financial backing). The money contributed to the NDC system finances the benefits of current pensioners. Money contributed to the financial account system is invested in individually chosen funds. In both cases, however, the account is illiquid until the individual claims an annuity at retirement. For this reason, the principal difference between the systems from the point of view of the individual is the rate of return. From the point of view of the economy, there is a potential macroeconomic difference in the effect on national saving. In fact, one of the motives behind the introduction of the funded component of the Swedish system was to help create (forced) saving in Sweden in the future, which will be discussed in some depth below.

The reform of the mandatory universal public schemes had repercussions for occupational schemes, as well, during the 1990s. Sweden has had quasi-mandatory, centrally negotiated, sector-based (occupational) pension schemes for 80–90 percent of the workforce since the mid-1970s. With the announcement of the public reform, the schemes for private blue-collar and local government employees, which together comprise more than half of Sweden's workforce, were transformed into advance-funded DC schemes.

In sum, with the reform, all workers in Sweden pay a 16 percent contribution rate to the PAYGO scheme and 2.5 percent to the mandatory advance-funded scheme. In addition, the blue-collar and municipal employees contribute 2.5 to 4.5 percent[3] to a quasi-mandatory DC scheme. This gives many workers a total contribution rate of 5–7 percent in an individual financial account DC system. In addition, the occupational schemes for private white-collar workers are also funded, but they are DB rather than DC schemes.

6.2.1 NDC Accounts and Annuities

Table 6.1 provides an example of how the NDC system works.[4] It depicts an individual with slightly higher than average full-time earnings,

3. The blue-collar scheme began with a contribution rate of 2 percent but is now at 3.5 percent. The rate varies for municipal workers.

4. Palmer (2000a) describes the options available in constructing an NDC system.

Table 6.1 **Example of Notional Defined Contribution**

Age	Earnings ($US)[a]	Capital Index ($US)[b]	Capital Balance ($US)[c]	Unisex Life Expectancy[d]	Annuity ($US)[e]	Replacement Rate (%)[f]	Annuity with Real Return = 1.6%		
							Unisex Life Expectancy[d]	Annuity ($US)	Replacement Rate (%)[f]
22	27,061	1.000	5,006						
23	27,602	1.020	10,213						
24	28,154	1.040	15,626						
60	57,432	2.122	414,368						
61	58,580	2.165	433,493	24.24	17,096	0.30	19.69	21,043	0.37
62	59,752	2.208	453,217	23.41	18,516	0.32	19.14	22,654	0.39
63	60,947	2.252	473,557	22.59	20,061	0.34	18.58	24,397	0.41
64	62,166	2.297	494,528	21.78	21,746	0.36	18.02	26,287	0.43
65	63,409	2.343	516,150	20.97	23,588	0.38	17.45	28,342	0.46
66	64,677	2.390	538,438	20.16	25,603	0.40	16.88	30,580	0.48
67	65,971	2.438	561,411	19.36	27,814	0.43	16.30	33,024	0.51
68	67,290	2.487	585,088	18.55	30,262	0.46	15.72	35,716	0.54
69	68,636	2.536	609,488	17.76	32,944	0.49	15.14	38,654	0.57
70	70,009	2.587	634,629	16.96	35,927	0.52	14.54	41,906	0.61

Source: Palmer (2000).

Notes: The sample subject is an individual who begins work at age twenty-two and works every year until he or she decides to retire fully, sometime between age sixty-one and seventy. Contribution rate on earnings = 18.5 percent.

[a]Individual earnings growth rate of 2 percent per annum.

[b]Two percent per annum.

[c]End of year.

[d]For Swede born in 1975.

[e]Based on life expectancy at retirement.

[f]Percent of earnings last year.

with values expressed in U.S. dollars. The NDC system is a typical account system. Contributions based on a certain percentage of earnings (in the example, 18.5 percent) are noted in an account. The account balance increases with indexation from one year to the next, and with new contributions from the current year. In Sweden, accounts are indexed with the per capita wage. In the example, individual earnings increase at the same rate as the per capita wage for an individual who enters the workforce at the age of twenty-two and continues to work every year until he or she claims a benefit. A benefit can be claimed from age sixty-one in Sweden. The example illustrates how the combination of additional earnings and contributions, the continued growth of the notional capital balance with indexation, and the change in life expectancy from retirement enhance the benefit—and the earnings replacement rate.

The benefit is calculated in the table in two ways. First, it is calculated by dividing the capital balance at the time of retirement by unisex life expectancy for persons the age of the person retiring. This is not how it is done in Sweden, but is how it is done in other countries that have followed the Swedish model (e.g., Latvia and Poland). In the Swedish system, as in the Italian reform legislated a year after the Swedish reform, the annuity also includes an imputed real rate of growth. In Sweden, this rate is 1.6 percent. (In Italy the rate is set at 1.5 percent.) A second example in the table shows what this means for the individual's annuity at retirement, compared to the use of life expectancy alone.

The annuity is indexed annually to the consumer price index (CPI). The annuity calculated with real growth of 1.6 percent implies real wage indexation over the lifetime at this rate. What happens if real long-term growth falls short of 1.6 percent? To maintain financial stability, given this form of front loading, this index is supplemented with an additional index that is based on the difference between actual growth and 1.6 percent. If actual growth is higher than 1.6 percent, the benefit is indexed upward according to the difference, and if it is lower, the benefit is adjusted downward according to the difference. Over the lifetime, this form of indexation of pensions gives the same result as straightforward wage indexation.

The front-loaded annuity shifts a part of the expected value of the total benefit stream, given life expectancy and the real return of 1.6 percent, from the future to the present. Compared to straightforward indexation of a benefit providing the same total income in retirement, this gives pensioners more money when young, but less when older. The Swedish annuity thus assumes that individuals discount future consumption in favor of present consumption. This method also provided a smooth transition from the old ATP system with its price-indexed benefit that, with real wage growth, declined in value over time relative to a current average wage.

The system as it has been implemented in Sweden is not perfectly financially stable under all circumstances, for at least two reasons. The esti-

mate of life expectancy used to compute the annuity is derived from the outcome of the immediate past, and is not based on a forward-looking projection. Imbalance can occur if the contribution base (wage sum) grows slower than per capita earnings (used for indexation in Sweden), or if longevity turns out to be greater than the estimate used in calculating the annuity.

In order to deal with this, yet another indexation mechanism was introduced into the Swedish system to brake downward pressure that can arise with a declining labor force or deviations from actual longevity. This balance mechanism is based on the development of system debt relative to the debt that would arise in equilibrium and corrects for all technical imperfections in the actual construction of the system.[5] The system will be endowed from the beginning with a buffer fund having significant starting capital from a similar fund from the old system. The fund will be used, however, as was originally intended when the system was conceived in the 1950s: as a demographic buffer. It will be drawn on to finance the baby boomers in 2010–25.

6.2.2 Is the Swedish Scheme an Innovation?

Boskin, Kotlikoff, and Shoven (1988; hereafter BKS) and the French point system are probably alternative schemes that bear the closest resemblance to the Swedish model, but they differ in principle in that they are faithful to the DB genre in various ways. In the French system, points are calculated by dividing an individual's contributions in a given year by an amount based on a reference wage. Workers receive extra points when they are sick, injured, or unemployed, or when they have three or more children. These are "free of charge," which means that there is redistribution within the system. There are also free points covering the working period before the creation of the scheme. A worker thus receives a yearly benefit increment expressed as points. A full pension is paid at age sixty or sixty-five, depending on circumstances. When the individual chooses to retire, points are added up and multiplied by the current value of a point.

The value of points is determined by a board on the basis of an estimate of the resources of the system. In determining available resources, the board takes the interests of employers, workers, and pensioners into consideration. In sum, the system differs considerably from the Swedish system. It attempts to remain faithful to the DB genre by defining points and a full-benefit pension age. Redistribution is financed from within the

5. Other imperfections have to do with information lags in general because pure equilibrium requires spontaneous adjustment, and with the fact that the system has a demographic fund earning a financial market rate of return that may surpass the notional (economic) rate, thereby helping the system with liquidity.

system, so part of a contribution can be viewed as a tax rather than an insurance premium payment, as in the Swedish NDC scheme. The Swedish system is a pure insurance model, with "extra credits" financed separately. Finally, in the French point system, the value of a point is determined by a discretionary process. In the construction of the Swedish model, autonomy from discretionary decisions and from the risk of manipulation for political gain were deemed necessary to maintain the credibility of the system.

In the BKS model life expectancy in the year the contributions are paid is used to determine the incremental value of that year's contributions toward a pension. To achieve system balance, a weighting factor is used. This factor is calculated from a projection of future retirement behavior and from survivor and disability take-up. In other words, the rate of return in the BKS model depends on the performance of the overall system for old age, disability, and survivors. The aim is to maintain financial stability within the *entire* system. An increase in the frequency of disability or number of survivors would yield lower old age pensions, but decreased disability take-up or fewer survivor years in the system would enhance old age benefits.

From the point of view of the participant, the yearly points derived in the French and BKS systems do not give a clearer picture of the future than does the Swedish system. In the Swedish system, individuals can follow the development of life expectancy and benefits as the National Social Insurance Board sends out its annual benefit projections.[6] In other words, there seems to be no information advantage in aspiring to define benefit increments, as in the French and BKS models.

An important feature of the Swedish reform is that it divorced the disability and survivor benefit systems from the old age system, in order to create a pure insurance system covering old age only. Neither the French point system nor the BKS proposal for the United States do this. The Swedish model moves disability out of the system, but calculates the cost of providing old age benefits to the disabled from age sixty-five and transfers the resources needed to finance these costs to the old age scheme. Direct application of the BKS model transfers disability costs to all current workers by reducing their future pensions, whereas the Swedish model claims the resources from the present consumption of workers. Moreover, the Swedish model sets the spotlight directly on the problem.

Separating the old age and disability systems also makes it possible fo-

6. In the Swedish NDC and financial account systems, individuals are informed on an annual basis of the development of their accounts, and are given a benefit projection using current life expectancy and alternative assumptions about their retirement ages and about economic growth, and using current life projections.

cus on the costs and problems of disability per se, which in Europe have tended to be driven by "moral hazard." Moral hazard results because employers know they can let older workers drift into sickness and then disability without taking adequate measures at the workplace (e.g., adapting work tasks and work hours, providing necessary breaks, giving physical and vocational training with new technology, etc.) to prevent this. There also must be acceptance of the possibility that wages for older workers do not need to keep up with those of younger workers.

Proponents of the Swedish model (including the present author) claim that it is important to distinguish clearly the merits, problems, consequent design, and hence, the messages of the design of the old age system from those of the disability system. The Swedish model separates social policy from social insurance. The earnings-related old age system is set up as an insurance system, and redistribution is moved into social policy. Social policy—which includes a minimum guarantee for old age pensioners, credits for childbirth, and more (to be discussed below)—is financed from the state budget with general tax revenues.

Finally, as opposed to DB systems that focus on retirement as an event, DC-based systems put the spotlight on work and on the rewards associated with a longer working life. With the prospects of declining numbers in the workforce it now appears that older workers will have to be viewed as an asset and kept on in order to meet the overall demand for labor. Defined contribution systems combined with tax (and other) rules that are neutral between work and retirement go a long way toward reducing the distortions between work and leisure for older workers. The transition to DC systems erases impediments for continued work, and may help increase the age at which individuals leave the workforce as improvements in health and longevity continue. It will nevertheless be important to adjust the *minimum* age at which a benefit can be claimed as life expectancy improves.

6.2.3 The Funded Second Pillar of the Mandatory System: Individual Financial Accounts

The funded second pillar of the mandatory public system can best be viewed in terms of an accumulation period and an annuity period. For the accumulation period, Sweden has developed what has come to be called the *clearing-house model,* as opposed to a more traditional insurance model. During the accumulation period, individuals can choose freely among one or more funds registered with the system. In the first year of choice, 2000, about 500 funds were registered in the system. Although there will be no funds dealing solely with derivatives, there are in principle no restrictions on fund portfolio composition. This means that the individual chooses his or her own combination of risks and returns.

This construction can be compared with an alternative that is based

on one or on a small number of index funds. For persons with the same accumulation period, an index fund will yield similar benefits; however, there still may be considerable differences between persons (and especially between age cohorts) who do not have the same accumulation period. The index fund idea was not adopted. The logic behind the alternative chosen is that, generally speaking, all funds can be expected to produce positive long-term returns, albeit of varying size. With unrestricted choice, persons can move freely between funds. No one is locked in a disadvantageous fund against his or her will.

The rate of return in the second pillar is thus determined by financial market development and individual choice of funds. In principle, table 6.1 is also a way to illustrate how the second-pillar financial accounts work, if one interprets the rate of return on the capital balance as a financial rate of return. Upon retirement, individuals can claim a fixed- or variable-rate annuity in the system. A variable-rate annuity is the result of leaving money in the individual's fund(s), as the annuity will reflect changes in fund values. A fixed-rate annuity is obtained by transferring individual capital at retirement to the state (monopoly) annuity provider. Annuities are based on unisex life expectancy.

The choice to limit the publicly managed component to a contribution rate of 2.5 percent was the result of a political compromise between the Social Democratic Party's position that the whole public system should be PAYGO, and the governing parties' preference for a larger advance-funded component. In addition, there was an agreement not to increase the scale of the entire public system, taking into consideration the fact that the vast majority of employees are also covered by supplementary occupational schemes. The supplementary system for blue-collar workers was also converted into an individual financial account DC system with a contribution rate of 3.5 percent. As has already been noted, the outcome for this and other groups is that the sum of the public mandatory and quasi-mandatory occupational contribution rate for old age coverage is approximately 22–23 percent, of which 5–7 percent goes to advance funding, depending on the sector in which they are employed.

Finally, the funded component of the public system was fit into the cost restriction (contribution rate of 18.5 percent) of the overall system without creating a new tax for future generations, by tightening up the system for those generations instead.[7] Younger workers traded future benefit rights in the PAYGO system for rights in the financial account system. If a higher portion of the 18.5 percent earmarked for the total system had been channeled into the financial account system, it would have had to be tax financed. Taxes had been increased during the deep recession in the early 1990s in order to restrict the size of the deficits. At the same time as the

7. Increasing life expectancy gradually decreases the size of the annuity, all else equal.

reform was being discussed and introduced, there was an agreement among all the major parties not to increase taxes any further, but instead to decrease them once budget balance had been achieved.

6.2.4 The New Paradigm and Social Policy

As the Swedish welfare state was being constructed in the 1960s and 1970s, there was a general feeling among policy makers and scholars that it was not important to identify the uses of funds in the government budget. Although the type of taxation might matter for individual decisions, the connection between a source of funds and a benefit was not considered to be important. The NDC PAYGO paradigm is based on the idea that it does matter. In principle, the NDC system is a pure insurance system: Individual lifetime contributions, and a return on these, determine an individual's capital when it is time to calculate an annuity at retirement. The individual is not paying a tax but is making a mandatory contribution to provide for his or her own future retirement.

Social policy is still important, but in making the above distinction, one is now arguing that the *tax-transfer* system *per se* is to be used for social policy. Redistribution is separated from the insurance system. Redistributional policy takes two primary forms: First, the main instrument of social policy is the guarantee pension for persons aged sixty-five and older. This is paid for through the tax-transfer system—that is, the state budget. Second, credits can be given to notional and financial accounts in the insurance system as long as they are accompanied by external financing. Without the external financing, the system would no longer be in financial equilibrium.

The Swedish system contains generous credits in conjunction with childbirth, which go almost exclusively to mothers and which can in total be the equivalent of a contribution rate of an additional three-fourths of one percent, but fluctuating with the number and timing of births.[8] There are also credits for time spent in military conscription and in pursuing higher education. Insured periods with benefits from sickness insurance, disability insurance, and unemployment insurance also give credits, and these credits are accompanied by money that is transferred into the pension system.

The guarantee pension is the primary safety net for pensioners. Individuals aged sixty-five and older can qualify for a guarantee benefit. The guarantee tops-off the two earnings-related benefits up to a specified ceiling.

8. Credits are given for a maximum of four years per child, and for one child at a time. Two children born two years apart give a credit of six years. The claimant (usually the mother) is entitled to the most advantageous of (a) an amount equal to 75 percent of average earnings for all covered persons; (b) 80 percent of her own earnings the year prior to childbirth; and (c) a supplement consisting of a fixed amount, indexed over time to the (covered) per capita wage.

For a single person, the guarantee by itself amounts to about 75 percent, after tax, of what is needed to reach the level set by the social authorities to obtain social assistance. The lifetime poor with no or only a very small earnings-related benefit will also qualify for a means-tested housing allowance, which normally is sufficient to bring him or her up to the national *minimum standard* for a pensioner. If this is still not enough, the individual has a right to means-tested social assistance.

In sum, the insurance system is separated from the social policy instruments in the new Swedish system. The insurance system links benefits directly to contributions and is designed to be financially stable over all generations. Social policy vis-à-vis the pension system is an entirely external affair. Credits backed by money can be voted upon in Parliament and transferred into the pension system. They can also be changed at some future date without affecting rights acquired and financed in the past. This gives Parliament latitude to change its mind on distributional issues without going back on its earlier promises, which have already been financed. One of the problems with the old system was that transfers built into the DB formula were not targeted; these turned out, upon close examination, to be arbitrary, and it was realized that they generally did not do what people believed they did or should do. Namely, they tended to benefit persons with steep earning careers. The reform has changed this.

6.2.5 The Outcome of the Reform for the Individual

A popular public misconception was that the old system replaced 60 percent of earnings at retirement, because the ATP formula was based on 0.6 times the individual's highest fifteen-year average earnings. Everyone with ATP and residing in Sweden also received the flat-rate *folkpension*—which was the floor in the system—and as a result could expect a replacement rate higher than 60 percent. Exactly how much higher depended on individual earnings levels, because the flat-rate supplement gave a higher replacement rate the lower individual earnings were. In sum, a pension in the old system could give varied replacement rates.

For most individuals, with average individual earnings growth of 1 percent, replacement was 60 percent—and with average individual earnings growth of 2 percent, replacement was 56 percent—of the final year's earnings before retirement. However, as we know, replacement rates in terms of final earnings may make little sense anyway because final earnings may not represent normal earnings. With the occupational supplement, which provided about 10 percent more, the replacement rate from the mandatory public systems and the occupational schemes was about 65–75 percent, depending on individual earnings growth during the fifteen years prior to retirement.

How does the new system compare with this? Pensions for the typical Swede are composed of the two components of the mandatory system—

Table 6.2 **Replacement Rates (annuity as percentage of last earnings)**

Age	NDC Only (contribution rate 16%)	Return for Public Second Pillar (2.5%) + Group Occupational (3.5%)			Return for NDC + Public Second Pillar + Group Occupational		
		2%	5%	8%	2%	5%	8%
61	0.32	0.12	0.23	0.47	0.44	0.55	0.79
62	0.33	0.13	0.25	0.52	0.46	0.58	0.85
63	0.35	0.14	0.27	0.57	0.49	0.62	0.92
64	0.37	0.15	0.29	0.63	0.52	0.66	1.00
65	0.39	0.15	0.31	0.69	0.54	0.70	1.11
66	0.42	0.16	0.33	0.76	0.58	0.75	1.18
67	0.44	0.17	0.36	0.83	0.61	0.80	1.27
68	0.47	0.18	0.39	0.92	0.65	0.86	1.39
69	0.50	0.19	0.42	1.01	0.69	0.92	1.51
70	0.53	0.20	0.45	1.12	0.73	0.98	1.65

Source: Based on Palmer (2000).

Notes: The individual's earnings are assumed to grow at a real rate of 2 percent per annum throughout the earning career. The rate of growth used for indexation of capital in the PAYGO system is 2 percent. The PAYGO, second-pillar, and group occupational annuities are all based on unisex life expectancy and a real rate of return on capital from retirement of 1.6 percent.

the NDC PAYGO component and the second pillar with individual financial accounts in the public system—and a group occupational scheme. Table 6.2 illustrates how all three of these work together.

The group occupational scheme for blue-collar workers was converted into a DC system with individual financial accounts in line with the reform of the public system. For the blue-collar worker, a total contribution rate of 6 percent (2.5 percent public + 3.5 percent occupational) goes to financial accounts. All calculations assume a rate of return of 1.6 percent per annum during the annuity period. The life expectancy is for persons born in 1975. Table 6.2 shows that with a rate of return of about 5 percent in the financial account systems, under the assumptions used here a replacement rate of 70 percent can be reached at age sixty-five.

As the example in table 6.2 illustrates, the financial rate of return is crucial. Financial rates in the range of 2–5 percent provide a replacement rate in line with traditional Swedish expectations about income replacement at retirement. Historically, from 1919 to 1996, the average real rate of return on Swedish stocks has been 8.6 percent while the real yield on bonds has been 3.1 percent (Frennberg and Hansson 1992; *Lag om premiepension* 1997). A mixed portfolio of stocks and bonds would yield about a 6 percent real rate of return, and a portfolio with a greater share of stocks would move upward to 8–9 percent if history were to repeat itself. In fact, if the financial rate of return is about 8 percent, these calculations suggest that Swedes are overinsured, because earnings replacement rates of more

than 100 percent by age sixty-five overshoot by far what most people believe is necessary. With this perspective, it would be possible to reduce PAYGO commitments in the future.

A final word of caution is in order. Replacement rates are difficult to work with because earnings profiles are usually more complicated than those used in the examples here. Earnings grow every year, and at a constant rate, in table 6. 2. Empirical evidence shows that earnings profiles for older workers flatten and may even decline. As a result, if we were to assume no earnings growth after age sixty (or some other age prior to sixty), replacement rates based on earnings the year prior to retirement would become much higher than those reported in the table. In sum, table 6.2 provides a basis for understanding how the combined systems work, but indicates only *relative* differences in replacement rates based on the assumptions employed.

6.3 Why Reform?

The 1994 reform replaced a DB system consisting of the flat-rate *folkpension* and the earnings-related ATP scheme introduced in 1960. The latter provided a full benefit at age sixty-five (age sixty-seven until July 1976), with thirty years of contribution history and based on an average of the best fifteen years of reported earnings (indexed to the CPI). Why did it become necessary to reform this system?

There were three major reasons for the reform. First, the old system was unfair: To a considerable extent, it transferred money from persons with lower lifetime resources to persons with higher lifetime resources. Second, it was financially perverse: It transferred a larger percent of resources from workers to pensioners when economic growth was low and less when real growth was high. Together with an increasing trend in life expectancy, a scenario with low real growth threatened to create an increasing burden on the working generation. The cost of the old age system could have increased from 18 percent to as much as 30 percent by 2030, with a low rate of growth. Few believed that future workers would regard this as tolerable, and thus most agreed that something had to be done.

A third reason for reform was the observation that, when the baby-boom cohort were to become pensioners, the large pension fund that had been accumulated since 1960 (equal to roughly 40 percent of GDP in the 1990s) would be depleted at the latest by around 2020. Although there was less consensus around this point, many believed it was important to create new "replacement" saving, but that any new form of forced saving should be managed through private-sector investment decisions.

The ATP system had served its original purpose well during its first three decades. It had been designed to provide significant benefits to persons born around 1905 to 1920, whose lives—and human capital—had

been affected by two world wars and a depression. The system began with a generous transition rule requiring only twenty years for a full benefit for persons born before 1915, twenty-one years for persons born in 1915, and so on, up to thirty years for persons born in 1924 and after. Not surprisingly, then, Ståhlberg (1990) finds that pensioners born between 1905 and 1914 could expect to receive lifetime benefits six times greater than their contributions. The return falls for younger cohorts. Persons born in 1944 and later were covered during all their (potential) working careers from age sixteen by the ATP system. Ståhlberg shows that persons born between 1944 and 1950 and later could expect at retirement to get back only 80 percent of what they paid in contributions.

A system that returns less than a Krona for every discounted Krona paid in could be defended on the grounds that it is intended to redistribute money from the rich to the poor, and thereby constitutes a part of a country's redistribution policy. With current patterns of work, however, Ståhlberg's study showed that the system transferred lifetime resources from the lower to the upper classes: from wage earners with long earnings careers and flatter lifetime earnings profiles to professionals and others with increasing earnings profiles.

The thirty-year rule worked against the typical blue-collar worker, whose earnings career is long but can be relatively flat. At the other extreme, it worked in favor of the white-collar worker with a longer period of education and later entrance into the labor market, but with a rising earnings career throughout almost all his or her working life and generally higher lifetime earnings. The fifteen-year rule was clearly to the advantage of persons with good earnings growth toward the ends of their careers, which is the case for any DB system in which benefits are based largely or wholly on career-end earnings.

The major claim for the thirty-year rule was that it was to the advantage of women, because women work part-time during a significant portion of their working careers. This claim received some support from Ståhlberg's work on the redistribution effects of the old system, based on the fact that the negative return on contributions for upper- and middle-class women was slightly less than the negative return for males born in the same period. This implies an intergender transfer. This transfer was very small, however, and did not hold for working-class women, who were, in fact, the group who could expect to get the least out of a Krona put into the old system. In sum, the old Swedish system was hard to justify on social redistribution grounds.

On top of this, the system was financially unstable. Actuarial calculations produced by the National Social Insurance Board showed that the contribution rate would have to continue to increase in the future, and considerably so, if long-term real economic growth were to fall well below 2 percent. Viewed over any 20-year period, benefits were largely deter-

mined by acquired rights of both pensioners and older workers, which were price indexed and hence immobile in the face of changes in real growth.[9] Growth affected benefits slowly through increased wages and new acquired rights of younger workers. With acquired rights in the coming twenty years already nearly established, the contribution rate required to pay for them was determined almost exclusively by the real rate of growth of the contribution base. With real economic growth of 1 percent per year, the contribution rate would increase to about 27 percent. On the other hand, real growth of 3 percent would be sufficient to maintain a constant contribution rate.

It is noteworthy that when the old system was being constructed, toward the end of the 1950s, economists were using a 3 percent real growth rate as their pessimistic scenario for the long-term future. At that time, real growth was around 4–5 percent in Sweden. It would have been difficult in the 1990s to find a Swedish economist who believed in permanent real growth as high as 3 percent. Most believed that Sweden would do well to produce long-term growth of 2 percent. In fact, some believe that hourly wages are already so high that new entrants into the workforce could be more interested in working fewer hours in order to have more leisure time, and that growth as high as 2 percent would soon become history.

When the ATP reform was introduced in 1960, economists argued that the improvement in benefits would replace some private saving, and that national saving was likely to decrease as a result of the reform. Later, studies by Markowski and Palmer (1979), Palmer (1981), and Berg (1983)[10] provided empirical evidence that through 1980, private saving had indeed decreased. The saving rate of households would have been 2–4 percent higher in the absence of the reform, according to these studies. However, from 1960 to 1982, contributions to the earnings-related ATP pension system were higher than was needed to pay for benefits. In fact, during this period, this was more than what was needed to counteract the estimated decline in household saving (Markowski and Palmer 1979).

Sweden's sizable public pension funds (about 40 percent of GDP) have been surrounded by considerable political controversy during most of their forty years of existence. Here, there has always been a clear dividing line between, on one hand, the Social Democratic Party and the left, and on the other, the parties to the right of the political spectrum. The agreement that was reached and strictly upheld through 1974 (and then moderated only slightly) was that the funds should be invested only in bonds and direct loans to companies—not in equities. In spite of this, in 1974 an

9. This is demonstrated in the analytical work performed for the reform (*Reformerat pensionssystem: Kostnader och individeffekter* 1994, 40).

10. Both Palmer (1981) and Berg (1983) included variables to capture demographic as well as transitory inflationary and unemployment effects on savings.

equity fund was created and allocated a small portion of the total reserves, and this was supplemented with additional equity funds as time passed. The share in the total portfolio of the market value of equities[11] in the 1990s has been under 15 percent.

The financial market was highly regulated in Sweden into the 1980s. This meant that the public pension fund was required to hold a large share of its portfolio in government and mortgage-backed bonds at a lower than market value. Regulation is estimated to have held down bond yields by at least one percentage point. In practice, this meant that consumption possibilities were shifted from the future to the present, subsidizing mortgages and government debt. The financial market was gradually deregulated in the 1980s, and these restrictions were lifted.

It is also likely that many politicians have viewed the pension fund as a part of the consolidated financial balance of the public sector, leading to less discipline regarding public expenditures. Beginning with the second crisis involving the Organization of Petroleum Exporting Countries (OPEC), from 1978 through 1982, and then once again during the first half of the 1990s, following a financial crisis, Sweden combated deep recession with heavy government borrowing. Following recovery in the 1980s, politicians were more inclined to increase rather than decrease expenditure commitments. Perhaps a new order with public pension funds held in individual financial accounts instead of in central public funds will have a sobering effect on future political expenditure decisions.

Whereas there was broad agreement from the beginning regarding the problems with the old system, political interests diverged considerably on the issue of funding. The non-socialist parties had never supported a large public fund within a PAYGO framework. For them, if there was to be substantial social security funding in the future, this would have to be funneled into the private market. The Social Democratic Party, with the support of the large blue-collar labor organization *Landsorganisationen* (LO), were satisfied with a public fund and were not worried about its size. At the time the pension reform was to be formulated, saving in Sweden was at an all-time low; household saving had been declining steadily, and widespread concern about this trend transcended political interests. Given the more general goal of creating new forced saving, it appeared logical for the Social Democratic Party to open itself to the position of the parties to the right in this issue. In addition, with this concession it would be possible for the parties to the right to agree on a larger mandatory system than they otherwise were prepared to concede. This opened the door for the introduction of a system with mandatory, privately managed, individual financial accounts.

11. The pension "fund" actually consists of six funds with separate boards of directors and managers.

6.4 The Reform Process

The ATP reform of 1960 was the flagship of Social Democratic social policy rhetoric and of the social policy of the welfare state that emerged under a series of Social Democratic governments from after World War II through 1976. What is more, the political intentions behind the 1960 reform had been fulfilled. Persons retiring in the 1970s and 1980s were doing better and better. From 1970 to 1989, more than half of an increase of 1.8 percent in real wages—prior to deductions for contributions—was redistributed through employer contributions to the social insurance system, mainly to finance the increase in pension benefits.[12] Old age pensioners have been the redistribution winners from the mid-1970s (see, e.g., Gustafsson and Palmer 1997). By the early 1990s, the average standard of an ATP pensioner was not much below that of someone living in a household with children, once the weighted consumption needs of all family members were taken into account.

The success of the system in improving pensioners' standard of living was not generally associated by the public, with the low rate of growth of take-home pay over the same period. Even had it been recognized, it is not clear that this alone would have created intergenerational friction, as long as younger generations of workers could expect the intergenerational commitment to be honored. The question was, could they? From 1977 into the mid-1980s, the welfare state had been held up on credit. This was not what its architects had had in mind. As the 1980s rolled out, substantial pension debt (promises) was being augmented by a large increase in the state budget debt. This came at a time when the economic literature was focusing on this issue, and the discussion filtered quickly into the public debate. In addition, the National Social Insurance Board published an actuarial report in 1983 revealing the extreme dependence of the system on good economic growth to maintain financial stability.

It was logical, then, that in October 1984, as Sweden pulled out of its first deep and prolonged post–World War II recession, a new Social Democratic government initiated a Pension Commission. In its directives to the commission, the government expressed concern about the long-term viability of the whole package of welfare promises to the elderly—health and community care as well as pensions. The instructions from the government to the commission were to examine all of these, with particular emphasis on the financial stability of the pension system and the interaction between the pension system and the economy.

By 1990, when it was dissolved, the commission had published well over 1,000 pages of analysis and discussion. It had made few proposals, although the two that had been made were also passed in Parliament. First,

12. The commission's final report (Ståhlberg 1990, 66).

the commission had been instructed to examine how the survivor benefit available only to women in the old system could be made equal in status to that for men. The commission proposed that the survivor benefit for women born after 1945 should be abolished, arguing that men and women born after the war were participating on equal terms in the labor market, and that hence, there was no need to provide for a special benefit for women. This proposal was legislated by Parliament and went into effect in 1990. Here, it can be claimed, a political desire to promote gender equality in all aspects of life shadowed the potential need for a little extra insurance for elderly survivors of both genders. In practice, this measure had the effect of privatizing survivor insurance, while it saved considerable money for the public sector in the long run.

The commission's second proposal was to abolish a right to be converted from unemployment to disability insurance for persons who had been unemployed from 58.3 years of age. This mechanism had been used in consensus between employers and unions to get around the seniority rules for older workers when redundancies were declared.[13] The commission expressed concern over the fact that the disability system was being used to remedy unemployment, and when this decision was being made (in 1988) unemployment was at a historical low in Sweden. The change was also logical because demographic projections pointed toward a future shortage in the supply of labor. Given this perspective, it seemed unnecessary to give employers and unions the continued opportunity to use the disability system to minimize the need to let younger workers go—by pushing older workers into disability—when trimming down businesses.

The Pension Commission of the 1980s made no proposals about reforming the old age system per se. It had been impossible for the political parties and interest groups that formed the commission to agree on anything. To the public, the chairman of the commission explained this by claiming that the commission saw no acute need for reform because the economy was doing so well and could be expected to do so for a long time to come. Seemingly in defiance of this bold optimism, the economy began its downward spiral within a year after this statement was made. According to usual procedure in Sweden, the report was sent to political organizations, interest groups, government agencies, and academic institutions to provide them with the opportunity to comment formally. In this way, the report, which analyzed clearly the shortcomings of the system, signaled the start of serious debate about reform.

In 1991, Skandia, a large private insurance company in Sweden, presented calculations for a proposal for a partial transition to a system with

13. Once this was abolished, the next threshold (i.e., the age at which a person can go from work to an unemployment benefit that lasts until a full old-age benefit can be claimed at sixty-five) became 63.3 years.

privately managed individual financial accounts. These calculations showed that a transition to more advance funding would be expensive for younger workers. With an estimate of costs in hand, some supporters of a transition to a large-scale advance-funded system with privately managed individual financial accounts toned down their claims. Proponents of privately managed financial accounts also directed their efforts toward restricting the size of the PAYGO mandatory commitments. To this end, they focused on maintaining a low ceiling on covered earnings and holding down the size of the contribution rate.

Another problem with the old system that entered the public discussion around 1990 was that average yearly full-time earnings were already very close to the ceiling on covered earnings (about 80 percent). On the other hand, since 1982, contributions had been paid on *all* earnings. Without indexation of the ceiling for real growth, it was easy to show that average earnings would surpass the ceiling and that, eventually, the system would evolve into a flat-rate system anyway. The speed of this process would depend on the rate of real wage growth.

A scenario in which covered earnings came close to the ceiling had considerable political support from the right because it implied gradual retrenchment of the public commitment and future privatization. At the other extreme, Social Democratic voters and voters to the left of this party still believed that the old ATP system should be kept intact with minimal changes. The joker in the deck, just as in the 1950s,[14] was the large white-collar union, *Tjänstemannens Centralorganisation* (TCO). In the spring of 1990, TCO had managed to kill a switch to a 20-40 rule being considered by the Pension Commission in the final hours of its work, by leaking the idea to mass media and then claiming that it would be to the extreme disadvantage of women. Many of the members of this union had much to gain by an increase in the ceiling, because many of those with earnings above the ceiling were white-collar managers represented by TCO. Their employers were paying both the "tax" on earnings above the ceiling, while at the same time they were required to finance occupational pension insurance to cover the *same* earnings, because the tax did not give social insurance rights.

Interestingly, for a long time there was a natural alliance around the ceiling issue between the blue-collar union (LO) and the Employer Confederation. Because ATP was financed by employer contributions, letting the

14. The rules of the ATP reform were set out in a proposal presented by the metal-workers within LO (Martin 1984). The 15–30 rule, with a factor of 60 percent of historical average (fifteen-year) earnings, resembled closely the scheme in existence for white-collar workers in TCO. Given this choice of construction, as opposed to a lifetime earnings scheme proposed by the Pension Commission of the 1950s, the Social Democratic Party hoped to gain the open support of TCO. This attempt went in vain, however, when TCO chose not to take sides in the pension debate of the 1950s.

system evolve slowly into a flat-rate system (i.e., with a gradual decline in acquired rights per Krona paid) implied limiting employer contribution increases for the public system, but higher costs for the occupational schemes. From the mid-1980s the Swedish Employer Confederation (*Svenska Arbetsgivarförening,* or SAF) had opposed overall increases in the employer contribution rate, including changes needed to finance the ATP system.[15] The view of LO was that as long as their own members were not seriously affected by the ceiling on covered earnings, this progressive tax should be kept. This view was also shared by the Social Democratic Party, whereas the parties to the right wanted to eliminate this form of tax on higher earnings.

A new four-party coalition government took office after the election in autumn 1991, and around the start of the new year the government formed a Working Group with a mandate to reform the old age pension system. The minister heading the reform committee, and the minister responsible for the reform, was Bo Könberg, who represented the liberal party. All seven parties in Parliament at that time were given a place in the Working Group, and, together with a handful of experts, they began their work in 1992. Anna Hedborg, who had represented the Social Democratic Party in the Working Group, became the new Minister for Social Insurance with the next change in government in 1996, ensuring the continuation of the reform process.

From the outset, there was political agreement on the principles to be followed: There should be a mandatory system providing coverage for *all* persons residing and working in Sweden. There should also be an adequate safety net, similar in coverage to that already in existence. Finally, the system should be designed to secure intergenerational trust, with general agreement that this could be achieved only by a financially stable system.

Generally speaking, the proposals emerging from the public debate and submitted by the various interest organizations and government agencies favored a reform approaching or adopting lifetime accounts. This idea was not new in the Swedish pension literature. In fact, the backbone of the first proposal made by the Pension Commission of the 1950s was a system with lifetime accounts.[16] The public discussion that emerged between 1990 and 1992 focused on the issues of PAYGO versus advance funding (and individual choice), and, generally, on private versus public management of funds and accounts.

15. Note, however, that empirical research indicated that, historically, increases in employer contributions through the mid-1980s were passed over almost wholly to wage earners through increased inflation and lower real wage increases (Palmer and Palme 1989).

16. The 15-30 rule that eventually emerged at the end of the 1950s was a political construction proposed by the Social Democratic Party aimed at giving high benefits within a decade after the reform was introduced. This was facilitated by a transition rule requiring only twenty years for persons retiring up to 1980.

The starting position of the political parties was more or less the same as in the 1950s. The Conservative and Liberal Parties favored lifetime accounts and a stronger element of privately managed financial accounts. The Center (previously Farmers) Party and Christian Democratic Party favored a large increase in the flat rate at the bottom, with private insurance on top (i.e., the original Beveridge model). These were the four parties that formed a government coalition in the autumn of 1991.

The Social Democratic Party, now in opposition, favored a PAYGO plan, but reconstructed to create more financial stability. This could be interpreted as moving more in the direction of lifetime accounts and maintaining a public fund as a demographic reserve. Nevertheless, the greatest opposition to reform also came from the rank and file of the Social Democratic Party: Many still wondered why they could not keep the old system that had served older workers so well. On the other hand, the blue-collar union, LO—a staunch supporter of the Social Democratic Party—was among the earlier supporters of the reform because they could see that lifetime accounts generally favored their members, and that more financial stability was needed to guarantee future benefits.

The framework for the reform to come was presented for public scrutiny in the autumn of 1992 (*En Promoria* 1992), with the vision presented being shared by the five political parties just discussed (two others will be discussed later in the paper). This proposal was based on a system with lifetime accounts, with a certain portion going to individual financial accounts. The systems would otherwise be similar in that the annuity would be based on lifetime account values at retirement, life expectancy, and a real rate of return on accounts. There would be a guarantee and credits in conjunction with childbearing, military service, and pursuit of higher education, and payments made into the system for insured periods of sickness, unemployment, and disability. Already suggested at this point was that the overall contribution rate would be 18.5 percent, about what old age pensions cost at the time. The political parties followed up this published proposal with information and discussion materials distributed throughout the country.[17] Many important details of the reform remained to be worked out and there still appeared to be room to maneuver for all interest groups.

By the autumn of 1992 the Swedish economy had almost hit rock bottom. Sweden was forced to let its currency depreciate and float. Unemployment had risen to a record postwar high, and once again the government found itself undertaking massive debt financing of welfare-state transfers to hold up current consumption. With the fall of the Krona and the generally precarious economic situation, and with seemingly no end in

17. The two Working Group members representing the Social Democratic Party published a debate book outlining the questions and proposals that were being put forward.

sight, the government established an Economic Commission, to be led by economics professor Assar Lindbeck. The commission was charged with examining the state of the economy from a structural perspective, and to make proposals for change. The Lindbeck Commission, as it came to be called, presented its report in early 1993. The commission proposed a long list of structural changes for the pension system, in line with the general framework for the reform proposed by the Pension Commission.[18]

This was the setting as the reform legislation was being ironed out in 1993. The Working Group on Pensions presented its proposal to the Parliament in the spring of 1994 (Working Group on Pensions 1994). The reform had the support of the four parties in government and the Social Democratic Party. These five parties represented more than 80 percent of the voters and included the two largest parties in Swedish politics. Two of these together, the conservative *Moderata samlingsparti* and the Social Democratic Party, held approximately 60 percent of the seats in Parliament.

In sum, at the outset powerful groups in Swedish society were promoting just about every conceivable scenario for change; reflecting back on the discussion and positions taken in 1991, perhaps the common denominator was lifetime accounts. Given this point of departure, it was possible to discuss both nonfinancial and financial accounts; exactly how to enter life expectancy into the PAYGO system; how to index in order to maintain financial stability; and finally, given that part of the system would be based on financial accounts, what form this system should take in practice. Directives were created for a new working group, composed mainly of persons with experience in finance and insurance together with some of the experts from the main working group, to work on this problem.

The main political lesson of Swedish reform is that without ownership of the reform across party lines, it would not have been possible to do more than simply tinker with the old system—and even this would have been difficult, as was witnessed by the futile attempt in the 1980s. The consensus arose out of the shared view of the old system's problems and a sense of a mission to implement a structurally sound reform that would provide sufficient mandatory benefits, without impeding the performance of the economy.

6.5 Financial Affordability: The Record up to the Reform and the Future

6.5.1 Events Preceding the Reform

In 1976, Sweden's "golden period" of postwar growth had just come to an end, although politicians at the time did not know this. The general

18. A separate analysis of social insurance was performed as a part of the commission's work (Palmer and Scherman 1993).

feeling in the mid-1970s was still one of economic optimism, and having just experienced two decades of 3–4 percent real growth in the economy, many believed this would be the path of the future. In 1976, the full-benefit age in the public old age pension system was decreased from sixty-seven to sixty-five. In addition, all the major collective labor agreements were eventually formulated to make sixty-five an obligatory pension age. This seemed to be an order of things that was suitable to both employers and collective labor. In effect, to remain in the labor force after age sixty-five, a worker had to become self-employed and contract out his or her services. At the time, collective labor pushed the idea that a retirement benefit at age sixty-five was an integrated part of the overall employment agreement.

These labor-management agreements remained in place, and in spite of the new reform, which is designed to enable individuals to work past the age of sixty-five. Both employers and unions are reluctant to change. There was a political consensus that this reluctance to change centrally negotiated labor-management agreements would result in new legislation, establishing the right of individuals to keep their employment to the age of sixty-seven. This came in 2001.

Behind this emerging shift in how the political system views "the" retirement age is the trend in improved health and increased life expectancy, and the question of who should pay the cost of increased life expectancy for pensioners. Should it be future workers, as in the typical DB framework, or workers before they retire—by working longer—which the DC system encourages.

The major driving force behind the political consensus to remove impediments to remaining active for older workers has been the increase in life expectancy. On top of this, concern developed in the 1990s about the trend in employment of persons older than fifty-five. Let us examine briefly the history, in this respect, of the four decades since the ATP reform in 1960. The labor force increased by more than 50 percent, from about 2.7 million workers in 1960 to about 4.1–4.3 million in 1980, a level at which it has remained since then. The increase was mainly a result of the full-fledged entrance of women into the workforce, with participation rates for women born after 1945 equaling those of men. In addition, younger persons now spend more time getting an education, and thus delay their entrance into the labor force.

The increase in the labor force has been somewhat mitigated by an increase in disability claims, which doubled from about 150,000 to 300,000 between 1960 and 1980. In the 1990s the number of disability recipients appears to have leveled out at around 420,000 persons, or about 9 percent of the (potential) workforce. The ATP reform improved earnings replacement for disability, and disability take-up increased as benefits improved and as criteria were applied more liberally. Since 1960, individuals have also been able to claim an actuarially reduced benefit from the old age system from age sixty, and about 4 percent do so. In the 1990s, 22–25

percent of persons age sixty to sixty-four had a full disability benefit,[19] which means that about 25–30 percent of persons aged sixty to sixty-four have either a disability or an old age benefit from the public system.

Gendel (1998) has recently compared the median age of exit from the labor market with a social security benefit in four countries, including Sweden. For Sweden, this age declined from 65.9 for men and 65.0 for women in 1965–70 (before the decrease in the pension age from sixty-seven to sixty-five), to 62.3 for men and 62.4 for women in 1990–95. Gendel shows that American and Japanese women exited at about the same time as Swedish women in the early 1990s, but that Japanese men waited more than two years longer than Swedish men to claim a benefit.

The age at which people *leave the labor force* is lower than the age at which they claim an old age benefit from the public system. In Sweden, this age is influenced by the possibility for some workers to retire early with an occupational benefit and for other older workers to obtain severance pay from their employers. Presently, we have no good data to study these phenomena, especially that of severance with pay, because this remuneration is lumped together with earnings in the nation's income statistics.

What we can do is study employment among a cross-section of people in a specific age group at different points of time. Using this method (see Palmer 1999b; Wadensjö and Sjögren 2000), and examining employment of persons aged fifty-five to sixty-four, we find that in the mid-1990s men on average worked 6.5 out of a possible 10.0 years, implying an average exit at age 61.5. The picture was better as recently as 1990 for men, who worked an additional year, that is, about 7.5 of a possible 10.0 years between ages fifty-five and sixty-four. Unemployment among older men was around 2–3 percent until 1993, then increased to more than 10 percent in 1997, after which it began to decline.

Using the same approach, women worked on average a little more than four of ten possible years, for an average of four years of work out of ten possible and an implicit exit age of fifty-nine. By 1998, with an improving labor market, women were working about one year longer: five years with an implicit exit at sixty (Wadensjö and Sjögren 2000). In addition, since 1994, about 10 percent of women over age sixty have been unemployed. In an international comparison Sweden nevertheless does well in employing older workers. Within the OECD, only Iceland, Switzerland, Japan, and Norway employ a greater percentage of persons over fifty-five years of age (Wadensjö and Sjögren 2000). One of the reasons for Swedish success in keeping older workers employed may be that even the old system was designed with the goal of keeping employable persons in the labor

19. Unemployment among older workers was low—around 3 percent—until 1993, when it increased to more than 10 percent at its height in 1997.

Table 6.3 **Life Expectancy from Age Sixty-Five**

	1960	2000	2010	2020	2030	2040
Men	13.9	17.9	18.7	19.3	19.7	19.9
Women	15.4	21.3	21.9	22.4	22.7	22.9

Source: Statistics Sweden.

force up to age sixty-five. Palme and Svensson (1999) explain why, and as it turns out, the "tax" pressure to leave the labor force is lower in Sweden than in many other OECD countries (Gruber and Wise 1999).

In a DB system of the type Sweden had prior to the reform, the benefit formula did not reflect increasing life expectancy. In the 1950s, when the ATP reform was being considered, a man who was sixty-five years old then was expected to live about fourteen years past age sixty-five. For a woman who was sixty-five at that time, life expectancy was around fifteen years. In the year 2000, a man who was sixty-five was expected to live 17.9 years, and a woman, 21.3 (see table 6.3).

Life expectancy from age sixty-five increased by four years for men and six years for women between 1960 and 2000: on average, more than one year for every ten years. In the light of this, the official forecast (from 1998) is very cautious. Life expectancy is expected to continue to increase, but the rate of increase is assumed to be much slower in the forecasts. With the life expectancy increase in table 6.3, a DB pension for a new entrant (born in 1975) into the workforce will cost, in 2040, 11 percent more for a male and 7.5 percent more for a female than for a person retiring in the year 2000 at the same age. What would happen if life expectancy were to increase instead at the same rate as during the past forty years? The same DB pension would cost 22 percent more for a person becoming a pensioner in the year 2040 (person born 1975) compared with a person born in 1935 and retiring in the year 2000.

In sum, the record in the four decades following the 1960 ATP reform includes a decrease in the age at which Swedes claim a public pension and a strong increase in the life expectancy of pensioners. In principle, the reform has addressed this issue straight-on by strengthening the link between additional work and pension size, by rewarding older workers for foregoing early retirement, and by making the annuity a direct function of life expectancy. In practice, the final link in the reform is to create legislation for the right of workers to remain employed until the age of sixty-seven.

6.5.2 Who Should Pay the Bill for Increasing Life Expectancy?

The conflict of interests among politicians, employers, and unions has its origin in the paradigm shift in thinking about the rights and obligations

of workers and pensioners in collective PAYGO pension schemes. The old view, as it is revealed in the design of most PAYGO schemes in practice, is that the risk of pensioners increasing longevity should fall on current workers. This view is anchored in the principle that it is not right to change the main source of income (i.e., pensions) for persons (pensioners) who cannot react to this by adapting their own labor supply. With this view there is no choice other than to charge current workers with the bill for increasing life expectancy, given the rules created by preceding generations as well as—at worst—the work and retirement decisions of the persons who were following those oftentimes too-generous rules.

The new paradigm, embodied in the NDC reform adopted in Sweden, is based on the insurance principle. The rules of the game are still set in advance, but the principle maintained is that the fairest system is one in which most—if not all—of the risk of increasing longevity is shifted to individuals while working and away from future workers or the pensioners themselves when they are retired.[20] In this way, expectations of future longevity become one of the determinants of our private decisions about work and leisure, and about consumption and saving, *before* we retire completely.

The Swedish reform uses the NDC PAYGO model to implement full decision flexibility for older workers and makes it easy to *exit gradually* from the work force. Because the system is actuarially fair and benefits have, in principle, the same form of indexation before and after retirement, the increment to lifetime resources that arises is derived from working longer and paying more contributions.

In the old system, under which future workers were assumed to pay the bill for increasing life expectancy, an implicit transfer was built into the system. In the end, however, future workers would always have the alternative to vote for forms of indexation or changes in tax schedules that shift resources back to themselves. The NDC PAYGO system as it has been formulated in Sweden substantially reduces this transfer, and the associated future political risk.[21] With increasing life expectancy, and all other things equal, an individual will have to work longer in order to maintain a given level of lifetime consumption. The alternative is to choose less

20. It is not possible to shift all the risk in a PAYGO system without having exact knowledge or perfect forecasts of longevity in advance. Most of the risk can be shifted, however, and the remaining nonrandom risk can be distributed as it becomes known. In the new Swedish system, the cost of any remaining change in life expectancy after retirement will be shared between workers and pensioners, to the extent that financial stability requires this. See the discussion below on indexation.

21. Diamond (1997) and others have argued that advance-funded schemes with privately managed individual accounts have an advantage compared with PAYGO systems in that they minimize political risk. The NDC formulation, with correct indexation for financial stability and with annuities based on life expectancy, can be claimed to remove much of the political risk inherent in typical PAYGO schemes.

consumption. In economic terms, there is no reason the pension system should be set up with a contract under which future workers subsidize early exit from the labor force for current workers. In insurance terms, the legitimate reason to shift the cost of early exit to others in the insurance collective is reduced working capacity owing to poor health or functional handicap.

What individuals clearly lose in the new Swedish system is a "subsidy" to retire early in a world with improving health and increasing life expectancy. In this new paradigm for social security, the individual chooses between work and leisure after reaching the minimum retirement age, with two new advantages: First, work or leisure can be combined with partial benefits (claimed at different times) from one or both of the two public systems. Second, covered work always yields contributions that produce higher benefits; that is, the system is fair. Because future workers bear the cost of the subsidy in the old system it is in the interests of organized labor to create a neutral system in this sense.

In a free market setting without protective employment legislation or strong union interests promoting the right of older workers to keep their jobs, individuals and employers freely negotiate individual contracts. In countries having strong employment legislation to protect individual rights, but also collective agreements beyond those needed to restrict rights for reasons of functional capacity with regard to certain work tasks, an additional step may have to be taken. The remaining question is whether the employment legislation should establish the right of older workers to remain until a certain age. In Sweden, politicians say yes, and this age has been set at sixty-seven. In practice, at least in the near future, most Swedes will probably prefer to exit earlier anyway; but as time goes on and as health continues to improve and life expectancy to increase, this will provide the opportunity for more people to choose to work longer.

6.5.3 The Swedish Reform and Affordability

Trends in the numbers of pensioners and contributors, along with the construction of the benefit formula, determine pension costs and the share of wages workers must pay to maintain the PAYGO system commitments. The contribution rate that must be paid to maintain a DB PAYGO system is simply the ratio of benefit payments to the covered wage bill. Breaking down benefit payments into the product of the average benefit (b) times the number of beneficiaries (P) and the wage bill into the average wage (w) times the number of workers contributing (W), we have

$$c = \frac{b \times P}{w \times N}.$$

This simple formula demonstrates the constraints on the system. For example, with two workers per pensioner, ($P/N = 0.5$), and with a policy goal to maintain a contribution rate of 18.5 percent, the ratio of an average benefit to an average wage will be 0.37. With three workers per pensioner ($P/N = 0.33$), the average PAYGO benefit can be about 56 percent of an average wage. The difference between three and two workers per pensioner means a lot, then, and this simple example illustrates that a country has a lot to gain by keeping people in the work force.

Table 6.4 shows how the dependency ratio has developed in Sweden since the ATP reform in 1960. The ratio of both old age and disability pensioners to contributors was 33 percent in 1960 and about 50 percent at the time of the reform. In other words, there were three workers per beneficiary in 1960 but only two by the mid-1990s. In terms of the simple equation above, a pretax old age benefit amounting to 65 percent of an average contributor's wage required a contribution rate of a little more than 18 percent in 1960 and almost 25 percent in 1997. With the 1997 dependency ratio, the contribution rate required to maintain, for *both* old age and disability, an average benefit level of 65 percent of a contributor's average wage would be 31 percent.

When the reform was being discussed in the early 1990s, the official demographic forecast indicated Sweden would have about 2 million persons over the age of sixty-five in 2025, an increase of about 25 percent since the turn of the century. The number of contributors will be about the same, however. In fact, the number of pensioners would be larger because there are also persons living abroad who have worked in Sweden and have earned the right to some portion of an earnings-related benefit. If we continue with the above example, it would require a contribution rate in the old age system of 31 percent to maintain an average benefit amounting to 65 percent of an average wage, and of 37 percent for old age and disability together.

The old Swedish system was not as expensive as this exercise might suggest, however; benefits did not keep up with real wage growth because

Table 6.4 **Dependency Rate (pensioners [*P*] as a percentage of contributors [*N*])**

	1960	1970	1980	1990	1997
Old age benefits	754	969	1,382	1,554	1,592
Disability benefits	145	212	303	361	417
Contributors	2,692	3,422	4,126	4,387	4,160
Dependency = old age benefits/ contributors	0.28	0.28	0.33	0.35	0.38
Dependency = (old age benefits + disability benefits)/contributors	0.33	0.35	0.41	0.44	0.48

Source: Swedish National Social Insurance Board.

Table 6.5 **Contribution Rate Needed for Balance without a Fund**

	2000	2020	2040	2060
Old system				
1% growth	16	24.1	28.7	29.8
2% growth	16	20.6	22.5	22.9
New system				
Per capita wage indexation				
1% growth	16	19.5	19.9	20.0
2% growth	16	18.8	19.4	19.6
New system				
Wage sum wage indexation				
1% growth	16	19.5	19.3	19.1
2% growth	16	18.9	18.8	18.8

Notes: Ratio of pension expenditures to the contribution base.

they were indexed with prices, not wages. The result is similar to multiplying the equation above with a reduction factor based on expected real growth and the survival rates for beneficiaries.

6.5.4 Projected Financial Costs

Finally, what happens to costs with and without the reform? To compare the new system with the old, the funded second pillar of the mandatory public system can be treated as an NDC component by setting the rate of return equal to the rate assumed for the NDC system. This has been done in table 6.5, in which the contribution rate upon which capital is accredited to accounts is 18.5 percent.

The ceiling has been indexed with real growth in the old-system scenarios to make them comparable. With real growth and a fixed ceiling, increasingly more wage earners would have larger and larger proportions of their earnings above the ceiling. Because of this, in the very long run the system would evolve into a flat-rate system with the same benefit for all. In the 2 percent growth alternative, this process would have reduced costs by about 5–10 percent in 2025 compared to the scenario with an indexed ceiling, and by 15–20 percent by 2050.[22] Of course, one of the alternatives to the reform had been to let this process simply continue, pushing future commitments increasingly into the occupational schemes, which before the reform were DB schemes. In terms of financial consequences for the public sector, the major problem with this strategy was that it worked much too

22. Calculations are presented in *Reformerat pensionssystem: Kostnader och individeffekter* (1994). The result depends on what one assumes about the future development of the distribution of earnings. The distribution used in these calculations reflects that of the first half of the 1990s. In the second half of the 1990s, renewed growth was unevenly distributed in favor of high-income earners. This distribution would have led to a higher percentage of earnings above the ceiling.

slowly in low-growth scenarios—precisely the scenarios that became much too expensive by 2020–30.

One of the problems with the old system was that the development of benefits poorly reflected the ability of the system to bear costs. In any given twenty-year period the cost of benefits were largely determined by past events. The ability to pay was a function instead of the growth of the contribution base. The system was designed for 3 percent growth, worked adequately with 2 percent growth, but became very expensive with 1 percent growth or less. This is illustrated in table 6. 5. Without reform, and with yearly per capita wage growth of 1 percent, pension costs would have increased by about 50 percent, from over 18 percent to over 26 percent by 2020. In the new system, the guarantee costs about 2 percent in the first decade, but since it is price indexed, its cost declines slowly with time.

For a long time, pension costs will continue to reflect old-system commitments. Beginning in 2003, when persons born in 1938 turn sixty-five, the new system will begin to go into effect in the sense that the first cohort will receive benefits based partially on the new rules. It will take until 2019 for all newly granted benefits to be calculated entirely with the NDC formula. The reform also strikes a deal with persons born before 1938, who are almost all retired by the year 2000. The deal is that even their benefits will be indexed with the same index used to adjust NDC annuities when they diverge from actual real growth of 1.6 percent. Thus, from the beginning of 2002, if growth falls below 1.6 percent the benefits of existing pensioners are reduced by the difference between actual growth and 1.6 percent. It is this process that—together with the gradual introduction of the NDC benefit—holds down costs in 2000–20. With 1.0 percent wage growth, costs are reduced to a contribution rate of 19.5 percent, instead of 24.1 percent without the reform. This was also part of the Swedish pension discussion in the early 1990s, when the National Social Insurance Board first proposed this mechanism.

The other side of the deal is that pensioners' benefits are increased by the difference between actual growth and 1.6 percent when wage growth is higher. This still costs less than the downside scenario with 1.0 percent growth, expressed in terms of the contribution rate needed to support benefit payments. This gives pensioners partial wage indexation, but the contribution base increases more quickly with the full rate of growth of average wages.

By 2040 almost all pensioners will have NDC benefits. The new system never fully reaches its equilibrium of 18.5 percent, because the calculations include the cost of the guarantee. Table 6.5 shows the difference between per capita wage indexation of NDC benefits and wage-sum indexation. There is a difference because the labor force is slowly declining in this demographic scenario: for any given rate of per capita wage growth, the contribution base will grow at a slower rate, and wage-sum indexation

holds costs in line with the equilibrium rate of 18.5 percent. In the Swedish reform the balance index will perform this function.

Part of the remaining gap between actual costs and 18.5 percent has to do with the way life expectancy is entered into the NDC formula in practice in the Swedish reform. Life expectancy is calculated in terms of an average of the four last known years prior to a benefit claim. A strict actuarial procedure would be based on a projection, and with increasing life expectancy there would be less to mop up.[23]

Swedish Parliament decided to use per capita wage indexation and to calculate life expectancy as it is entered into the calculation of the annuity using ex post data. On the other hand, the NDC system begins with a large fund, and yields on this will be used to help finance benefits. (In fact, a larger portion will be invested in equities in the future.) In order to remedy the threat to financial equilibrium, a balance index has been created, based on the ratio of the actual pension debt to the theoretical debt using wage-sum indexation. When this index falls below unity, benefits are indexed downward, with the same effect as that of wage-sum indexation (see Settergren 2001).

In sum, the reform has also introduced an indexation mechanism for the transition period that will keep the system in financial balance. In the long run, the system moves toward financial equilibrium. There will always be imperfections in the actual engineering of systems until we have the facts in hand, because (for example) of the uncertainty about life expectancy and perhaps for other reasons that also have to do with how life expectancy enters the annuity. For this reason, some of the risk of increasing life expectancy may still have to be shifted to pensioners to achieve balance, but this effect will be very small if it occurs at all.

6.6 Conclusions

The first conclusion from Swedish pension reform is that political interests representing a broad spectrum of interests can be brought together in consensus. Second, although there are usually options at each point along the road in engineering reform, the framework of the reform consisted of principles for which there was broad agreement. This is what held the reform effort together. Third, the reform that developed appears to have central elements that should keep it resilient in the future. The most important of these are the transition to lifetime accounts (notional and financial) and the use of life expectancy throughout in the mandatory public system, with the resultant shift in the financial cost of aging to workers while they are working. Financial stability has been achieved even in the near future—the next twenty years—with the introduction of wage indexation

23. Note that this is the way it is done in the Latvian version of the NDC reform.

with a norm of 1.6 percent rather than zero. This means that, even with poor economic growth, the system will make it through the transition into the new NDC and advance-funded systems, and thereafter should remain financially stable.

References

Aaron, Henry. 1966. The social insurance paradox. *Canadian Journal of Economics* 32:371–74.

Allmänna Tillaggspension (ATP). 1987. *ATP och dess finansiering i det medel: Och långsiktiga perrspektivet.* RFV Anser 1987: 9. Stockholm: Riksförsäkringsverket.

Berg, Lennart. 1983. *Konsumtion och sparande: En studie av hushållens beteende.* Uppsala: Uppsala University.

Boskin, Michael, Laurence J. Kotlikoff, and John Shoven. 1988. *A proposal for fundamental social security reform in the 21st century.* Lexington, Mass: Lexington Books.

Bröms, Jan. 1990. *Ur askan av ATP* (From the ashes of ATP). Stockholm: SACO.

Buchanan, James M. 1968. Social insurance in a growing economy: A proposal for radical reform. *National Tax Journal* 21:386–95.

Castellino, Onorato, and Elsa Fornero. 1999. From PAYGO to funding in Italy: A feasible transition? *Geneva Papers on Risk and Insurance* 24 (4). Geneva: Blackwell Publishers.

Diamond, Peter. 1997. Insulation of pensions from political risk. In *The Economics of Pensions,* ed. S. Valdés-Prieto. Cambridge, UK: Cambridge University Press.

Disney, Richard. 1999. OECD public pension programs in crisis: An evaluation of the reform options. The World Bank Social Protection Paper no. 9921. Washington, D.C.: World Bank.

Feldstein, Martin, and A. Samwick. 1997. The economics of prefunding Social Security and medical care benefits. NBER Working Paper no. 6055. Cambridge, Mass: National Bureau of Economic Research.

Frennberg, P., and B. Hansson. 1992. Swedish stocks, bonds, bills and inflation. *Applied Financial Economics* 2:3–27.

Fox, Louise, and Edward Palmer. 1999. Latvian pension reform. Social Protection Discussion Paper no. 9922. Washington, D.C.: World Bank.

Gendel, Murray. 1998. Trends in the retirement age in four countries, 1965–1995. *Monthly Labor Review* 121 (8): 20–30.

Góra, Marek, and Michal Rutkowski. 1997. *Social security through diversity: Reform of the pension system in Poland.* Warsaw: Office of the Government Plenipotentiary for Social Security Reform.

Gruber, Jonathon, and David Wise. *Social security and retirement around the world.* National Bureau of Economic Research Conference Report. Chicago: University of Chicago Press.

Gustafsson, Björn, and Edward Palmer. 1997. Changes in Swedish inequality: A study of equivalent income 1975–1991. In *Changing patterns in the distribution of economic welfare,* ed. P. Gottschalk, B. Gustafsson, and E. Palmer. Cambridge: Cambridge University Press.

Lag om premiepension (Legislation for the Premium Pension). 1997. Sweden's Official Publications 1997, no. 131. Stockholm: Norstedts.

Markowski, Alexander, and Edward Palmer. 1979. Social insurance and saving in Sweden. In *Social security versus private saving in post-industrial democracies,* ed. George von Furstenberg. Cambridge, Mass.: Ballinger.

Martin, Andrew. 1984. Trade unions in Sweden: Strategic responses to change and crisis. In *Unions and economic crisis: Britain, West Germany, and Sweden,* ed. P. Gourevitch. London: Allen and Unwin.

Lindbeck Commission. 1993. *Nya villkor för ekonomi och politik: Ekonomikommissionens förslag.* Sweden's Official Publications 1993, no. 16. Stockholm: Norstedts.

Palacios, Robert, and Roberto Rocha. 1998. The Hungarian pension system in transition. Social Protection Discussion Paper no. 9812. Washington, D.C.: World Bank.

Palme, Mårten, and Ingemar Svensson. 1999. Social security, occupational pensions and retirement in Sweden. In *Social security and retirement around the world,* ed. J. Gruber and D. Wise. National Bureau of Economic Research Conference Report. Chicago: University of Chicago Press.

Palmer, Edward. 1981. *Determination of personal consumption: Theoretical foundations and empirical evidence from Sweden.* Stockholm: Almqvist and Wicksell International.

———. 1999a. Individual decisions and aggregate stability in the NDC system. mimeograph.

———. 1999b. Exit from the labor force for older workers: Can the NDC pension system help? *The Geneva papers on risk and insurance* 24 (4). Geneva: Blackwell Publishers.

———. 2000. The Swedish pension reform model: Framework and issues. World Bank, forthcoming.

Palmer, Edward, and Mårten Palme. 1989. A macroeconomic analysis of employer-contribution financed social security. In *The political economy of social security,* ed. B. A. Gustafsson and N. A. Klevmarken. Amsterdam: North-Holland.

En Promoria av Pensionsarbetsgruppen (Working Group on Pension). 1992. Promomoria: En Promomoria av Pensionarbetsgruppen (A proposal of the Working Group on Pensions). Socialdepartementet 89. Stockholm: Norstedts.

Reformerat pensionssystem (The Pension Reform). *Betänkande av pensionsarbetsgruppen* (Proposal of the working group on pensions). 1994a. Sweden's Official Publications 1994, no. 20. Stockholm: Norstedts.

———. 1994b. *Kostnader och individeffekter* (The financial consequences for individuals). Special Report of Sweden's Official Publications 1994, no. 21. Stockholm: Norstedts.

Samuelson, Paul. 1958. An exact consumption loan model of interest with or without the social contrivance of money. *Journal of Political Economy* 66:467–82.

Scherman, K-G., and Edward Palmer. 1993. *En ny socialförsäkring.* Stockholm: National Social Insurance Board.

Settergren, Ole. 2001. The automatic balancing mechanism of the Swedish Pension System. *Wirtschaftspolitische Blätter* 4:339–49.

Ståhlberg, Ann-Charlotte. 1990. *The ATP system viewed in a redistributional perspective* (in Swedish). In Sweden's Official Publications 1990, no. 78. *Allmän Pension.* Expertrapporter. Stockholm: Allmänna förlaget.

Tumbarello, Patrizia. 2000. The reform of the Italian pension system: A case for notional accounts. World Bank, forthcoming.

Wadensjö, Eskil, and Gabriella Sjögren. 2000. *Arbetslinjen för äldre i praktiken.* Stockholm: Institutet för social forskning.

Comments

Laurence J. Kotlikoff

Edward Palmer has written an insightful account of the very important and interesting notional defined contribution (NDC) redesign of the Swedish pension system. According to Palmer, the Swedish reform will keep the current 18.5 percent Swedish payroll tax rate used to finance the pension system from rising by roughly one third; that is, if future economic growth is modest. With more rapid economic growth, the reform will have a smaller impact in mitigating future payroll tax hikes. However, in that case, the requisite tax hike is itself rather modest.

In addition to limiting future payroll tax increases, Palmer praises the Swedish reform for improving benefit-tax linkage, eliminating capricious redistribution, providing an automatic financial stabilizer to deal with longevity increases, and introducing a small funded component to the state's compulsory pension system.

Although I agree with much of Palmer's assessment and believe he and his Swedish colleagues deserve a great deal of credit for steering the country away from what might, and I stress *might,* have been a calamitous policy path, my job is to play devil's advocate—and the devil here has much to say.

The first and most important concern is that the reform made a pay-as-you-go (PAYGO) financed state pension scheme a permanent component of Swedish fiscal policy when it could otherwise have been phased out through time. Under the old system, benefits were paid up to a time-invariant ceiling. Thus, had no reform occurred, the system would have naturally disappeared as an ever larger share of workers found their benefits were capped by this ceiling. The notional account reform, in linking state pension benefits to accumulated past contributions, has effectively indexed the pension system to the size of the economy, making it impossible for Sweden ever to outgrow this fiscal albatross.

Now Palmer believes that outgrowing the old system would have been impossible because Swedish governments would have responded, over time, to the natural shrinking of the pension system by periodically raising the benefit ceiling. This belief carries over to Palmer's analysis of the gains from reform. For example, in his table 6.5 comparison of payroll tax rates under the new and old pension systems, Palmer assumes that absent the reform, growth of the ceiling would have equaled growth in real wages. Although Palmer may be right, at least historically, the ceiling was never raised. Table 6.5 would benefit from showing how much the payroll tax would have declined had pension reform never occurred and the ceiling never been raised. This addition to the table would likely show that the

Laurence J. Kotlikoff is professor of economics at Boston University and a research associate of the National Bureau of Economic Research.

reform may have significantly raised long-run payroll tax rates and squandered a golden opportunity for getting out from under a PAYGO system once and for all.

A second concern involves transparency and benefit-tax linkage. The new system says that a thirty-year-old worker will receive marginal benefits in old age in exchange for his or her marginal contributions at age thirty. The precise amount of these future benefits, however, is highly uncertain because it depends on the following three factors: (1) economy-wide real wage growth, because contributions accumulate each year based on annual per capita real wage growth; (2) longevity improvements, because annual benefits are actuarially determined; and (3) a hard-to-understand "balance index adjustment" that adjusts benefits to maintain a certain size pension reserve fund.

These three factors leave workers with a claim to future pension benefits that is highly uncertain and very hard to comprehend. Contrast this way of establishing an NDC with the detailed NDC proposal I formulated with Michael Boskin and John Shoven in 1980 (Boskin, Kotlikoff, and Shoven 1988; hereafter BKS). The BKS plan, which we presented to the 1983 Greenspan Commission on U.S. Social Security reform, determined for the worker each year the marginal benefit he or she would receive in retirement for that year's contribution. The BKS scheme uses actuarial formulas to connect future retirement, survivor, and disability benefits to current contributions. The plan also specified the use of the very latest survival probabilities in calculating the amount of additional future pension benefits to be "purchased" each year in exchange for that year's contributions. The single discount rate used each year to discount all future amounts in these actuarial calculations is, in the BKS plan, chosen to produce present value financial balance in the overall pension system. Specifically, a lower rate of return is used in the actuarial formulas if the present value of system-wide future benefits, discounted at the then-prevailing term structure of market-determined government bonds rates, exceeds (1) the present value of system-wide future contributions, where these contributions are also discounted using the latest term structure of rates of return on government bonds, plus (2) the system's current reserves.

In choosing each year's NDC discount rate to keep the system in present-value balance, and in using the latest survival probabilities in the calculation, the BKS NDC plan, like the Swedish plan, makes automatic adjustments for longevity changes and long-term financial imbalances. However, it does so in a way that does not make a worker's annual future benefits highly uncertain right up to the moment he or she retires. Rather than foisting so much risk on new retirees, the BKS plan spreads that risk across all current workers. In so doing, it appears to provide better intergenerational risk sharing than does the Swedish plan.

A third concern one can raise with the Swedish reform involves the 2.5

percent funded pillar. Workers are forced to save 2.5 percent of their wages in the marketplace, ostensibly to help ensure that they do not end up with lower living standards in old age. Thus a social goal underlies this policy. Yet in permitting workers to (1) choose whatever portfolios of assets they like, (2) try to beat the market, (3) try to time the market, and (4) pay whatever loads, fees, and commissions investment companies can induce them to absorb, the Swedish government has, in effect, forced workers to play the lottery collectively with 2.5 percent of their lifetime incomes. Contrast this with the proposal Jeff Sachs and I put forward for a funded pillar in which all workers' contributions are invested in a single, market-weight, global index of stocks and bonds. By requiring that workers invest in the same fully diversified portfolio, the Kotlikoff-Sachs (1998; hereafter KS) plan ensures that all workers receive the same rate of return. In addition, competition to sell this single portfolio would drive fees and commissions down to very low levels.

The presumed response to the KS plan is that workers have different tolerances for risk and should, therefore, be permitted to invest in light of their own risk preferences. The counterargument has three elements. First, a social plan to guarantee old age income support should not promote old age income disparities among otherwise identically situated workers. Second, differences in risk preferences do not necessarily imply that workers should hold different portfolios of risky assets. Indeed, this is the key point of the capital asset pricing model and other models of portfolio allocation. Third, many households choose what appear to be patently inappropriate investments, either far too conservative (e.g., investing all assets in certificates of deposit) or far too risky (e.g., investing all assets in a single stock). If governments feel they need to force their constituents to save, they must believe that many of them lack the capacity to formulate and carry out appropriate saving plans. Why, then, should such governments presume these same constituents will be able to formulate and undertake appropriate portfolio choices? David Blake's paper (chapter 10 in this volume) provides ample evidence of the problems incurred when inexperienced investors are set upon by experienced money managers.

My final concern with the Swedish reform and Edward Palmer's defense of it is that the financial viability of that program must be considered in light of the financial viability of the entire Swedish fiscal enterprise. A recent generational accounting study of Sweden's long-term finances suggests that Sweden, like most other developed countries, faces significant fiscal stresses with the impending retirement of the baby boom generation (Raffelhüschen and Kotlikoff 1999). In light of the substantial imbalance in Swedish generational policy, one must ask whether future Swedes can really afford to pay close to 20 percent of their lifetime incomes to the pension system when their taxes for so many other programs are already high and likely to rise dramatically. Stated differently, although the Swed-

ish reform appears to have greatly reduced the long-term fiscal problems facing that nation, it is unclear whether it went far enough in that direction.

References

Boskin, Michael, Laurence J. Kotlikoff, and John B. Shoven. 1988. Personal security accounts: A proposal for fundamental social security reform. In *Social security and private pensions: Providing for retirement in the 21st century,* ed. Susan Wachter, 179–206. Philadelphia: Lexington Books.

Kotlikoff, Laurence J., and Jeffrey Sachs. 1998. Privatizing Social Security the right way. Testimony before the Subcommittee on Social Security of the House Committee on Ways and Means. U.S. House of Representatives, 3 June. Available at [http://www.econ.bu.edu/kotlikoff].

Raffelhüschen, Bernd, and Laurence J. Kotlikoff. 1999. Generational accounting around the globe. *American Economic Review* 89 (May): 166–67.

Discussion Summary

In his reply to the discussant, *Edward Palmer* explained that in Sweden people receive an account statement every year. This account statement shows the value of the individual account converted into an increment to the benefits—given today's projection of life expectancy. Palmer said that he does not see a substantial difference between the benefits calculated in the Swedish notional defined contribution system and an annuity computed by a private insurance company. The only difference is the existence of funds in the one system but not in the other. Palmer emphasized that necessary adjustments are automatic and as explicit as possible in the Swedish system. According to *Laurence J. Kotlikoff,* there is a difference between the Swedish notional defined contribution (NDC) system and his own proposal. In the NDC system, the benefits in the annual account statement change from year to year with changes in the underlying parameters. In Kotlikoff's proposal, the benefits in the account statement do not change through time. Edward Palmer disagreed and said that he does not see a difference between the two proposals.

Palmer reported that during the debate about pension reform there were some proposals to let the old system die by having the "ceiling take its toll," as the discussant suggested. However, these proposals were not put on the table by the major political parties. Palmer said that the problem would be that the ceiling would take its toll on different groups in different ways and at different times. Concerning the survivor benefits, he noted that the goal in the 1989 part of the reform process was to eliminate the survivor benefits. The excuse for that was that the safety net was adequate

without them. He raised doubts about this assessment. He also reported that there was a discussion about keeping overall balance in the whole public sector. He expressed his skepticism about the success of these plans. Referring to the discussant's proposal of introducing an index fund instead of the large number of funds, Palmer said that he expects that many index funds are going to be offered and that people can choose such a fund if they want to.

Axel Börsch-Supan raised three questions about the notional accounts. First, he asked whether intertemporal or interpersonal transfers are possible in the notional accounts system. Second, he noted that notional accounts may make pension reform harder in the future, because it will be harder to adjust the system if it is in trouble. He asked whether this effect has been taken into consideration in the Swedish reforms. Third, he referred to some rumors concerning troubles in managing the notional accounts. He wanted to know what these rumors are about. *Edward Palmer* answered that transfers would be possible in principle, and in the beginning of the reform process there were thoughts about introducing transfers between spouses. However, it was then decided to let divorce law legislation take this into consideration. The management problems mentioned by Börsch-Supan had to do with delays in the introduction of the information technology system for the second pillar. The system began in September 2000 instead of September 1999.

Assar Lindbeck called the Swedish pension reform progress, because the system now includes automatic adjustment mechanisms that adjust the system to increased longevity or changes in the tax base. Lindbeck called it one of the greatest advantages of the Swedish system to increase the freedom of choice and to return some responsibility to the individuals.

Jeffrey Liebman referred to concerns that the introduction of notional accounts reduces the amount of redistribution in the social security system. In his view, that does not have to be the case, because the governments can collect taxes proportional to earnings and contribute to the notional accounts in a redistributive way. With respect to redistribution in the Swedish system, he asked whether there is still a flat benefit in addition to the means-tested anti-poverty program. Liebman also wanted to know whether during the debate about setting up the new program there were discussions of funding the notional accounts in progressive manners. *Edward Palmer* answered that there is no longer a flat benefit but instead a guaranteed benefit, which very much resembles the Finnish system. The guaranteed benefit, however, is not enough to live on, so that some people need housing supplements or means-tested social assistance in addition to the guaranteed benefit.