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The Swedish NDC system - A critical assessment

*Report on work in progress to the conference session B. Longevity and annuitization, risk-sharing in pension design
Comments are most welcome*

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SWEDISH PENSIONS REFORMED

Public pensions have traditionally formed the biggest part of the income arrangements for the elderly in Sweden. A goal was formulated for the old public pension system saying that people at retirement should be entitled to a public pension at a replacement rate of 65%¹.

Beginning around 1980, Sweden had a prolonged period of discussion around the need to reform the public pension system. The reform needs were similar to those prevailing in most industrialized countries, i.e.:

- a normal pension age that had been unchanged for decades, in spite of an increasing life expectancy;
- a “baby boom” generation that was approaching retirement;
- a benefit system that was overgenerous – in this case one that required only 30 years employment for a full pension and that based benefits on average earnings during the 15 best years.

Many of these problems originated from the fact that the system was designed at a time when expectations about economic growth were much more optimistic than today.

In the 1990s, a completely new system was designed and implemented. Principles for the reform were decided in 1994, and the new system was successively implemented over 1999, when the main parts of the new law came into force, to 2003, when for the first time initial pensions were calculated with respect to this law. Behind the reform stands a broad majority from left to right in the Swedish Parliament.

THE “NEW SWEDISH PENSION MODEL” HAS BECOME MUCH OBSERVED IN THE INTERNATIONAL DEBATE

The reform in Sweden is subject to much comment, and the “Swedish model” is being recommended by the World Bank, the European Commission and numerous finance ministries. Swedes are saying: “With so much international praise, it must be a good reform we have implemented”.

There is a need to sort out what this new “Swedish model” really is, and to realize that it contains a whole range of different features.

From a pension system point of view, there are the following features:

- A completely changed PAYG scheme, ending up in the “notional defined contribution” (NDC) model; including

¹ Around 90% of wage-earners have had and have still an occupational pension providing some 10-15% additional replacement rate. Over the last decade all of these schemes have been renegotiated into contribution defined schemes, making projections of future replacement rates more precarious than before. One critical factor is the assumption about real return on pension funds. A “conservative” estimate is to assume approximately the same real rate of return, after administrative costs, as the increase in wages. Such estimation leads to the assumption that the replacement rate from occupational pensions for a person who works on average wages for 40 years and retire 2050 at an age of 65 will become between 7.4% and 9.5% of final salary.

- Life-time earnings as the basis for the level of retirement pension;
- Abolishing the “normal pension age”;
- Taking increasing life expectancy into account in the calculation of pensions, thereby steadily raising the age when a person can retire with an adequate pension.
- The introduction of a funded pension component alongside the PAYG part;
- A successive phasing out of the minimum pension in the face of economic growth.

From the point of view of pension politics, other features come to the fore:

- There was a broad political consensus behind a reform that effectively reduces pensions and pension expenditure;
- There was no public opposition despite reductions in future pensions.
- Sweden’s reputation as an advanced welfare state makes it useful for politicians elsewhere to refer to their reform proposals as following the Swedish model.

Given the above aspects of the Swedish reform, it is clear why it is claimed that many reforms follow the Swedish model. Indeed, this can be claimed for every reform which reduces pension expenditure. Second, it can be claimed for every reform that, in the face of raising life expectancy, increases retirement ages and/or accomplishes a corresponding result by reducing benefits drawn at a certain age (such as has happened in Finland and Germany and is proposed in Norway). Third, such a resemblance can be claimed following the introduction of a funded component in the public pension arrangements (for example, in Poland, Hungary and in the voluntary scheme in Germany). Finally, it can be claimed whenever an NDC approach is adopted (such as in Italy, Latvia, and Poland)

There is a need to know what a reference to “the Swedish model” really means. This is needed in order to avoid confusion that otherwise might arise from an association of various features of the new Swedish model with what Swedish welfare arrangements have traditionally stood for, but which does not apply to this pension model. And such a clarification is needed for Swedes better to understand the reasons for the international praise of our reform.

In the following the Swedish reform will be presented and its different features² discussed. The authors thesis is that the reform is based on sound financial and social principles but that, in spite of this, a whole range of measures must be designed and implemented in order to make the system acceptable from a social point of view.

THE NEW PUBLIC SYSTEM; TARGETS AND RULES

The new old age pension system contains an earnings-related part and, in addition, it offers protection, a minimum pension, to those who have no or only a low earnings-related pension.

Minimum pension

There is a minimum pension compensating for the difference between a *guarantee level* and the actual earnings-related pension a person is entitled to. It is financed by the state budget. It can be awarded from 65 years of age. The level of this guarantee was quite high when it was

² There is an international literature emerging on the Swedish pension reform and on NDC pensions at large. About this see an Appendix at the end of this paper.

established in the 1990s, but it is indexed according to the cost of living, regardless of the development of wages. In the long run, its relative value will diminish in the face of wage growth. In 2006 the guarantee level for a single person was around 85 000 SEK³ per year and the ceiling for a pension from the public system was around 190 000 SEK. At a growth in real wages of 2%, the ceiling will become 380 000 SEK in 35 year's time, while the guarantee level in real value will remain the same: 85 000 SEK. It is the stated policy of the government, reiterated time and again, that this should be allowed to happen⁴

Earnings related pensions: Stated objectives

The concepts of the *replacement rate* (pension amount compared to an earnings measure for an individual) and the *relative pension level* (pensions for a group of pensioners compared to earnings for the same or another group of earners) are central to a study of the adequacy of pensions. These concepts offer a basis to make evaluations of a scheme and to compare the way in which it performs with the objectives set by those who initially established it.

In the principles for the Swedish pension reform formulated back in 1994, pension levels and replacement rates were addressed. (Government bill 1993/94:250, pages 50 and 62-63)

The discussion was introduced by clearly stating that *there are no reasons why the pension levels in general should need to be reduced*, and continued by stating that *pensions from the reformed system shall, at today's life expectancy and generally speaking be approximately on the same level as in today's system*.

Further on this statement was qualified in the following way:

The public pension system shall give a pension at approximately the same replacement rate (old-age pension as percentage of final salary) as in today's system, i.e. somewhere between 55% and 65%, for a person who works to a normal extent, provided 2 % real growth in the national economy and under certain other conditions.

Moreover, it was stated that the level of contributions was calculated and established so as to make the above-cited replacement rates possible. The ambitions on the part of the politicians responsible for the reform can be traced to these formulations. Individual replacement rates should be at the target levels for those who work "to a normal extent". Unfortunately, the concept of "a normal extent" was not defined. From the wording of the bill, it is reasonable to assume that such a person at a life expectancy such as prevailed in 1994, was expected to work for 40 years with annual earnings equal to average wages.

³ The exchange rate between the Swedish krona and the Euro is around 9 krona per Euro. Average wages were around 300 000 SEK in 2006 (In 2005 it was 291 600 according to the Finance Ministry, April 2007).

⁴The true intention of pension politicians on this count can be disputed. It is not even obvious that they really understand the matter. The OECD, in *Pensions at a Glance* (2007) writes: "As noted in the section on methodology, some countries, such as Sweden and the United Kingdom, in theory propose to index key parameters, such as the value of retirement safety nets, to *prices*. As previously noted, if implemented over a 40- to 50-year period, this would result in unrealistically low living standards for poorer pensioners which would not be politically sustainable. Therefore, pension-systems parameters are assumed to increase over time in line with *average earnings*."

In the following we will discuss how pensions under the new rules meet these targets. But first, the new rules will be presented.

Earnings related pensions: contributions, pensions rights and age of retirement

The public earnings-related pension system is financed by contributions levied on earnings subject to a ceiling.⁵ Contributions are also paid in full, either by the State or by the State and the employee together, and pension rights are granted for periods when social security benefits are received and for certain other periods without earning from gainful activities. This is an important feature for creating social justice without overburdening the finances of the system. Under this rule all social security benefits give pension rights, based on the benefit itself. For all these benefits, with the exemption of disability pensions, the individual pays a contribution equal to the employee's contribution. The State pays a contribution equal to the employer's contribution. Into the category where pension rights are calculated based on other criteria than remuneration comes three different types of activities. Those are child care, military service and education above a certain level. The state will pay the total contribution, 18.5%, on such pension rights, as well as for pension rights stemming from disability pensions.

The contribution rate is 17,21% and it is intended to be unchanged into the indefinite future. It is the contributions themselves that constitute pension rights. The contribution rate in relation to earnings less employees' contribution, which is 7%, becomes 18,5%. This is the rate used for establishing pension rights and it is the figure mostly used also when discussing contributions. It is split between a Premium Pension funded scheme (2.5 %) and a pay-as-you-go (PAYG) scheme (16%). There is also a certain tax on earnings above the ceiling for earnings that constitutes pension rights⁶.

The Premium Pension follows conventional private insurance principles. The PAYG scheme is completely rearranged compared to conventional PAYG schemes and is a notional defined contribution (NDC) scheme. The new rules for calculating initial pensions are gradually introduced over a 17 year period, beginning in 2003, during which the old system, the ATP scheme, is phased out.⁷ Rules in the new system are in certain cases applied retroactively –

⁵The *ceiling for pension carrying earnings*, i.e. earnings which are subject to contributions and give rise to pension rights was 359 000 SEK in 2006. The ceiling is indexed to wages.

⁶ This tax is 10.21 %. It goes into the state budget and has nothing to do with pensions, although, probably for political reasons, politicians and representatives of the authorities usually refer about it when presenting the pension system.

⁷ The transition rules affect persons born from 1938 up to 1954. For those born in 1938, the pension will be the sum of 4/20 of what the rules in the new system should give and of 16/20 of what the rules in the old system should give. For a person born in 1939 the factor will be 5/20 in the new system and 15/20 in the old system. Persons born before 1938 will remain in the old system and persons born in 1954 and later will be entirely in the new system. A consequence of the transitional rules is that the financial behaviour of the pension system will be dominated by the rules governing the old system for a long time. For the same age groups there is also a different distribution of contributions paid into the new system. The effect of this particular rule is that out of the total sum of contributions is 16,4 percentage points set aside for the PAYG scheme in 2001. That fraction is diminished by around 0,02 percentage points and reaches its long range level, 16 percentage points by 2018.

i.e., credits in the new scheme will be applied for years before its introduction⁸. Some changes were also made to the old system⁹.

There is a close interconnection between the size of the premium pension scheme and the ability for the PAYG scheme to honour already accrued entitlements in the old PAYG scheme. Given a situation where a certain total contribution to the PAYG scheme and the premium pensions schemes together is considered to be the decisive parameter, every percentage point of contribution that is diverted to the funded scheme is not available for financing the PAYG scheme. This weakens its ability to fulfil existing obligations. Projections along these lines, including assessments of the importance of a huge pension fund available in the old PAYG scheme, were of great importance for the decision about the size of the premium pension.

Everyone is entitled to draw an old-age pension from the earnings related schemes at age 61 or later. Pensions may be taken out as a whole pension or a partial pension and can be combined with gainful employment. The earnings from such gainful activities will be added to lifetime earnings and will increase the size of the pension. In line with actuarial principle, the later a pension is drawn, the higher it will be. As we will see this goes for both the funded part and the PAYG part of the earnings related pension system.

A funded component

The Premium Reserve system is new. The contribution to that part is 2.5 percentage points and it pays for life annuities based on insurance principles. The system is administered separately from the PAYG system. Private and public fund managers are available. The rest of the administration and the insurance function of this sub-system is a public responsibility under a newly-established Premium Pension Authority (PPM). The law states that this authority shall conduct its work “according to insurance principles”, which means that it should follow the rules applicable to private insurance companies.

The management of individual funds during the period before retirement is entrusted to fund managers of the individual’s choice or, if the individual does not choose a fund, to a separate, state-run “default fund”. Today, there are nearly 800 funds available in the system. The PPM, itself, handles the relations between the individual contributors and the funds into which they save.

People are allowed to change funds whenever they want and they can divide their assets between up to five funds. This freedom of choice results in high transaction costs for the system. There are no significant restrictions proposed for the investment activities of the funds beyond the general regulations to which every investment fund in Sweden is subject.

⁸ The general rule is that rights are established for earnings from gainful activities and from social security benefits in the old system as in the new one. Credits for childcare are also granted for all previous years, while credits for higher education and military service are credited only from 1995 onwards. While for years before 1995 rights are built up only with respect to the new PAYG earnings related scheme, but then based on the full contribution rate, 18.5 %, for years thereafter they will also be built up with respect to premium reserve scheme, with a split between the two schemes as in the future, i.e. 16% and 2.5 % respectively

⁹ The same indexation formula for pensions as in the new system will be introduced for pensions already in payment under the old system. As a consequence, if the growth in wages is lower than 1.6 per cent, these pensions will be lower than they would have been under the old rules. If the growth is higher, the pension will gain in value correspondingly.

There is no guarantee against bankruptcies, nor any guarantee of a minimum rate of return. The individuals themselves need to bear the risk.

Pensions can be drawn only as life annuities. These can be of two types, a traditional life annuity with a guaranteed amount or a unit-linked annuity. When a person chooses the first type of annuity, it must be based on all accrued pension rights and the corresponding assets are transferred to the Premium Pension Authority, which is the sole provider of such annuities. When a person chooses the second type, the assets on which the calculation of the annuity is based will continue to be managed by fund(s) which the individual choose.

Funds that are to participate in the scheme must be registered with the PPM. Such a fund must:

- be entitled as a fund manager in Sweden according to the special law for such funds;
- have concluded an agreement of cooperation with the PPM;
- have agreed to disclose certain information;
- have agreed not to levy any charges when fund shares are withdrawn;
- have agreed not to levy any other charges than such accepted by the PPM;
- have agreed to report and specify on a annual basis to the PPM all costs levied on the fund.

The PPM has designed a model for the administration of the funds that is said to substantially reduce administrative costs compared to traditional fund management. However, there are still signs that the costs are high. The National Social Insurance Board has made calculations indicating that, unless steps are taken, as much as 22% of total contributions to this scheme made by or on behalf of a person joining at age 20 could have to be used to cover administration costs.

In the international debate there are many reasons put forward in favour of fully funded public pension arrangements. In the discussions about the Swedish reform, mention was made of the possibility that funding enhances savings, leads to greater personal involvement, give individuals greater security with respect to their pension entitlements and reduce the pressure on the fiscal balance. However, there were no definitive reasons given for the introduction of the funded component. Probably there was no consensus about the reasons, and the result was a pure political compromise.

A completely redesigned PAYG pension system

The pay-as-you-go scheme is completely redesigned as compared to a traditional PAYG scheme. Out of the total contribution, 16 percentage points are set aside for this part of the pension. It has become a notional defined-contribution (NDC) scheme. The scheme has the following features.

- Contributions are based on all earnings over an individual's full working career.
- It is the contributions themselves that constitute pension rights
- Indexation rules are linked to average wage development:
 - pension rights being indexed to average wage growth,
 - pensions in payment being indexed to average wage growth reduced by 1.6 percent per year ("flexible indexation").

- Benefits are made dependent on life expectancy, meaning that a benefit drawn at a certain age by an individual belonging to one cohort will be lower than that for the preceding cohort, if life expectancy has increased.

The pension calculation is based on the accumulated pension rights that are registered annually¹⁰. The total is indexed each year to reflect the average increase in wages¹¹. Such an index will have the effect that when there is an increase in the average real wages, the value of the accumulated pension rights will increase in real terms, and if there is a decline in the level of average real wages, the value of the accumulated pension rights will decrease accordingly. The reason why the growth of average earnings rather than the sum of earnings is used as the basis for the index is the wish to let pension rights grow in line with the incomes of people in employment.

The pension from the PAYG system that is payable in the first year is calculated by dividing the accumulated pension rights by an annuity factor. The three elements that determine the annuity factor are established in the following way:

- a real rate of return called the “norm” which is set at 1.6 percent¹²
- the remaining life expectancy at age 65. For the 1940 birth cohort is estimated at around 18 years and 6 months;
- the age at retirement.

Once a pension is established, it is indexed annually, taking into account the growth in average real wages as well as the “norm”. This means that pensions will be adjusted annually by the sum of increase in the cost of living and the increase in average real wages less 1.6 per cent points. The level of the “norm” was set in the reform law, and it is not intended that it will be changed in the future.

The following table illustrates possible outcomes for a person retiring at 65.

¹⁰ To the rights directly stemming from the registered earnings of an individual are added inherited gains, i.e. the accumulated pension rights of those in a cohort who have died during the year which are distributed among those in the same cohort who have accumulated pension rights. For a person born in 1954 and drawing a pension at age 65, the total gain has been estimated at around 8 per cent of accumulated entitlements without such gains.

¹¹ The total earnings used in the calculation in a given year, are measured as the sum of all earnings in society reported as pensionable earnings (be they above or under the ceiling for pension rights) and the sum of early retirement pensions. The average is calculated using the total number of people reporting such earnings.

¹² The “norm” used comes into the annuity factor as an imputed real rate of return. Its function is to rearrange the time profile of pension payments over an individual’s time in retirement, making first years pension larger than it would otherwise have been. It has no connection to any projections of presumed increases of real wages.

Table 1. Development of pension in real value as compared to real wage for people who remains in employment

	pension		earnings of people remaining in work		replacement rate	
	Average wage increase:		Average wage increase:		Average wage increase:	
	1%	2%	1%	2%	1%	2%
at the year of retirement	100	100	200	200	50	50
10 years later	94	104	221	244	43	43
20 years later	89	108	244	297	37	37

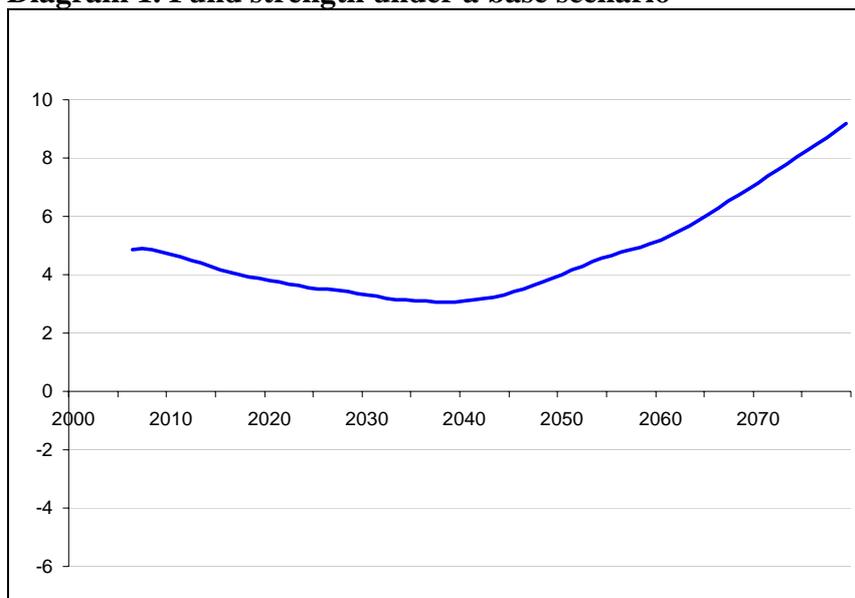
Note: People remaining in employment are assumed to have the same wage as the new pensioner when (s)he retires and their wages grow at the same rate as average wages

Source: Authors own calculations

From the table it can be seen that, regardless of growth in average real wages, the relationship between these and the pension is constant. A relationship at time of retirement of 50% is reduced to 43% at the age of 75 and to 37% at the age of 85. Moreover it might be worth repeating that one consequence of the indexation formula is that, if average real wages increase by less than 1,6%, the real value of the pension decreases. Should the average real wages grow by only 1% the real value of a pension decreases to 94% of the first year’s pension at the age of 75 and to 89% at the age of 85.

A special fund, the *buffer fund* is an important feature of the new system. All contributions to the PAYG scheme are paid into this fund and all pensions are paid out of it. As a consequence, the buffer fund accumulates capital in certain periods, for example if large cohorts reach working age or if labour force participation increases. The surpluses generated during these periods are used to balance financial strains on the system in other periods. Such a strain will occur when the baby boom generation reaches pension age. At the outset of the new system, most of the pension fund that had been accumulated under the former ATP pension system was transferred to the buffer fund where it served as a sort of “start up capital”. In the following diagram we can see the development of the buffer fund in a base scenario. The diagram is produced by The National Social Insurance Office (NSIO), formerly the National Social Insurance Board. The NSIO is charged with evaluating and publishing information about the social effects and financing of the pension system. In its *Annual Reports*, it reports on its findings.

Diagram 1. Fund strength under a base scenario



Source: NSIO, corresponding to Annual Report 2006, page 26

In this diagram the size of the fund is illustrated as fund strength, i.e. the number of years' pension expenditures that could be provided for with the fund alone, without any contributions. As we can see the fund at the inception of the new system is very large. The strain on the system develops gradually, peaks around 2040 and thereafter, it eases again. This development reflects the demographic development during this period.

We have seen that there are a couple of automatic features of the new system. Those features are automatic in the sense that they are intended to be defined once and for all in the current law. Among those are the automatic decrease in pensions drawn at a certain age, when life expectancy increases and the function of the buffer fund, to which all contributions are paid in and from which all pensions are paid out. Such features are today becoming fairly common, which can be studied in EU- as well as OECD publications¹³. In addition to the features in the Swedish scheme there is a range of formulas that make pensions dependant on demography and economy. Important is to realise, that all these new features and formulas operate *on the benefit side alone*. Germany is a god example. The so called sustainability factor, introduced in the 2004 legislation does contain an automatic adjustment to indexation of pensions in payment dependant on the relation between contributors and pensioners, but it is combined with commitments to political action, should either replacement rate or contribution rate targets risk not to be fulfilled. Hence, Germany has retained the idea of a political responsibility to monitor the balance between active and retired, by adjusting from time to time target replacement rates, the benefit formula and contributions. The flexibility in a PAYG scheme is retained. We call this type of automatic adjustments *automation of the first order*.

In many reforms the intention to stabilise the development of contribution rates is a driving force. In NDC schemes the contribution themselves are the basis for accumulation of pension rights. Following this it is not advisable to try to cure current financial problems by increasing the contribution rates; as such an increase would create new pension rights and new financial

¹³ See Appendix

problems in the future. *In NDC-schemes, the wish to stabilise contributions has been transferred into a basic principle, contributions are intended to be unchanged into the indefinite future.* But the Swedish system alone contains a mechanism that makes this to a consistent design. This feature is an *automatic balancing mechanism (ABM)*, a mechanism that operates directly on the financial balance itself. The ABM involves a yearly calculation of a *balance number* which records the ratio of assets (measured as the value of contributions together with the assets in the buffer fund) to liabilities (valued as acquired pension rights and the value of pensions in payment). The basic idea is that as long as assets exceed liabilities the financial sustainability of the pension system is secured. Should the balance number fall below unity, the automatic balancing mechanism is activated and leads to a cut in pensions. For example, if the balance number (*balancing ratio*) is 0.99, then one percentage point is deducted from the index that would otherwise have been applied to revaluation of accumulated pension rights and to pensions in payment. After a year, a new calculation is made. If, in spite of the reductions made in the previous year, the balance number is again below unity, a reduction in the yearly revaluation is made in this year, too. This process continues as long as the successive yearly calculations of the balance number produce a result below unity¹⁴. Whatever happens, the ABM reduces current and future pensions by as much as is necessary in order to maintain the stability of the system's financing. This mechanism can reasonably be labelled *automation of the second order*. It is in fact decisive for the functioning of the Swedish NDC scheme. The consequence is that there is no way to monitor the generational contract that is laid down in the pension formula, and no way of adjusting the system in the face of changes in external conditions to attain a balance between social goals and financial constraints in the future. This is the intended consequence: To get the politicians out of the need to deal with these highly complicated and sensitive matters.

The development of the balance number and its parameters can be seen in the following table 2, values in billion SEK (BSEK).

Table 2. The balance number and its parameters in BSEK 2002-2006

	2002	2003	2004	2005	2006
Buffer Fund	488	577	646	769	858
Contribution asset	5 301	5465	5607	5721	5945
Total assets	5 789	6042	6253	6490	6803
Pension liability	5 729	5984	6244	6461	6703
Surplus	60	58	9	28	100
Balance number	1,0105	1,0097	1,0014	1,0044	1,0149

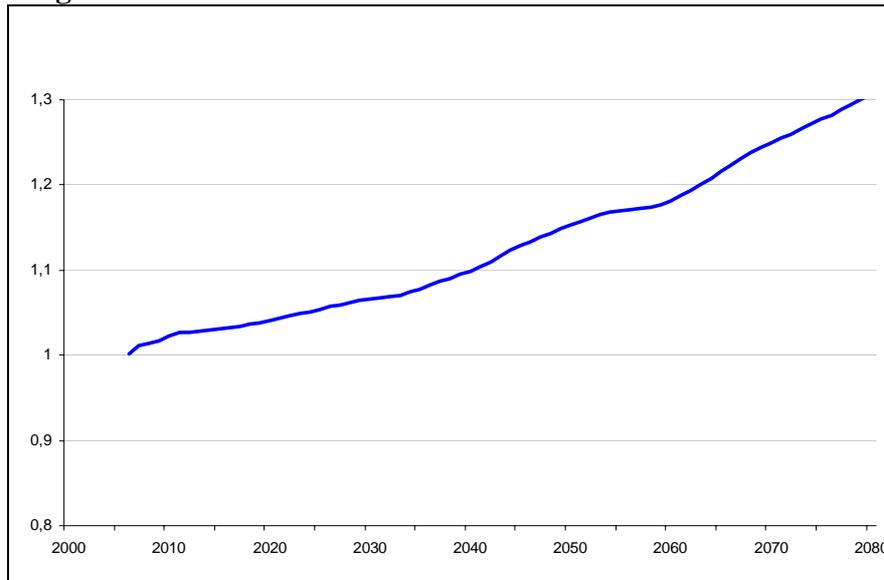
Source: NSIO, Annual Report 2006, page 49.

The magnitude of the parameters used in the calculation of the balance number can be illustrated by information about Swedish GDP. For 2006 it is estimated to 2 840 BSEK.

In the following diagram 2 we can see how the balance number develops under the same base scenario as for the development of the fund according to diagram 1.

¹⁴ Should the balance recover, i.e. should the balance number increase above unity after a period of reductions of the type just described, the indexation is *increased* above the level of wage increases. Such extra indexation is made until the indexation as a function of time has reached the level it should have had, should the balancing mechanism not have been activated. Following this, earnings during such a "recovery period" gain in value compared to all other earnings. About the consequences of this lack of symmetry in the balancing mechanism see Cichon in SIQ Nr 2 2005, pp 179-171.

Diagram 2. The balance number in a base scenario.



Source: NSIO, corresponding to Annual Report 2006, page 27

As we can see, these official calculations indicate that there is no significant risk that the balance number should fall below unity. Still, and in spite of this, even during this period, the automatic adjustment mechanism might very well be activated. We will come back to these matters and discuss the basis for the official calculations after having studied the development of pensions under the ordinary rules.

THE NEW PUBLIC SYSTEM; PENSIONS

Recently, much attention has been devoted in various international forums to establishing effective methods of making comparisons between pension systems. The result of one such effort can be found in reports produced under the EU *Open Method of Coordination* (OMC) process. Since the OMC is an effort to influence policy making in Member States of the European Union, it has come under close scrutiny by governments and national politicians who, in making their reports, seek to avoid what they consider to be unfavourable comparisons. Hence, the need for nuanced and alternative indicators has come to the fore. The *Swedish National Strategy Report on Pensions*, submitted to EU June 2005, is an interesting example of how the method functions in practice. This report will be used in this section, together with some other public sources to illustrate different aspects of the new pension system.

We will study the result of the Swedish pension reform on public pensions¹⁵. Our focus is on replacement rates and relative pension levels. We study the development over time of these indicators of pension adequacy and draw conclusions about the development of retirement ages necessary in order to obtain an adequate pension. We will also further discuss the financial sustainability and the automatic balancing mechanism.

¹⁵ When it comes to occupational pensions the trend is to transfer all of them into contribution defined, individual account schemes. They will not play a greater role than today. Rather it is probable that their contribution to the overall replacement rate will diminish slightly. After all, the outcome is dependant on how return on capital assets will develop, such as is mentioned in footnote Nr. 1.

Replacement rates

As it has been mentioned, the new public Swedish earnings related system consists of two parts, a NDC PAYG scheme with significant new rules, and a funded component, the Premium Pension scheme (PPS). Both parts are defined contribution, and consequently, a person's whole working career is the basis for the earnings related pension. The former ATP system granted a full pension for a person who had worked 30 years, and the pension amount was based on the 15 years with the highest earnings. The change to the new pension system from the former ATP system is gradually introduced. Hence, the reduction in relative pension levels and replacement rates following from the new system emerges only gradually.

In 2005 the Ministry of Health and Social Affairs produced calculations on the development of replacement rates, defined as the ratio of the initial pension to the last year's earnings. This work was published in the National Strategy Report on Pensions produced in the framework of the Open Method of Coordination, mentioned above.

Table 3 shows data from this report which illustrates reductions in replacement rates between 2005 and 2050 for different career patterns.¹⁶ Replacement rates for retirement in 2005 refer to initial pensions in that year which result from the combined effect of the new system and the ATP pension system under the transitional arrangements. Replacement rates for retirement in 2050 illustrate pensions stemming solely from the new system.

Table 3: Gross replacement rates from the public schemes (PAYG pension and Premium Pension combined) for persons retiring at age 65

Case	Retirement year	
	2005	2050
2/3 of average earnings during 40 years	62.5%	40.4%
Broken career (30 years of seniority at retirement at average earnings)	49.6%	30.3%
"Model case" - Constant earnings for 40 years as an average production worker	53.0%	40.4%

Source: National Strategy Report on Pensions, Ministry of Health and Social Affairs, July 2005, pages 41-42

In the case of an individual with 2/3 of average earnings over 40 years, there is a drop in the replacement rate from 62.5% in 2005 to 40.4% in 2050. A part of this fall is due to the phasing out of the minimum pension in the new system.

In the case of an individual with a 30 years working career, the replacement rate drops from 49.6 down to 30.3%. This is the result of the lifetime earnings perspective applied in the new scheme, as opposed to best 15 of 30 years applied under the ATP system. This case shows that the concept of "work to a normal extent" has a significant impact on replacement rates. The greater the difference between people's actual working career and 40 years, the greater the reduction in replacement rates and average pension levels in the new system.

¹⁶ The estimation on return on investments in these calculations is 3% and an increase in average wages of 1.8% is assumed. At a real rate of return of 2% around one percentage point should be deducted from all the figures in 2050.

The “model case” closely follows the case in the formulation of objectives for the 1994 reform. Between 2005 and 2050, the Ministry’s calculations show the replacement rate for a “model worker” falling by around 13 percentage points. We analyze this particular case further in the following. We begin with a description of the influence of life expectancy on pension levels, as has been provided by the National Social Insurance Office

Work more and until a higher age

The NSIO Annual Reports have shown the effect of demographic change and of changing ages of retirement. Up until 2004 the NSIO has illustrated the development of demographic changes for different cohorts as compared to the birth year cohort 1940.¹⁷ Table 4 shows what the NSIO thinks these are according to Annual Report 2004.¹⁸ The reason for why this table is presented, rather than later ones, is that later Annual Reports has switched focus, as it has been discovered that the demographic development during the 1990 have had a significant effect on the outcome of the comparisons. Here we will take the description in two separate steps that will highlight what has happened.

Table 4: Combined effect of demography and age of retirement

Cohort born in	reaches 65 in	Forecast annuitization divisor at 65	Effect of change in life expectancy on pension at 65	Retirement age to neutralize effect of life expectancy on pension	Remaining life as a pensioner
1940	2005	15,7	–	65 years	18 years, 6 months
1945	2010	16,1	–2 %	65 years, 4 months	18 years, 7 months
1950	2015	16,4	–4 %	65 years, 8 months	18 years, 7 months
1955	2020	16,8	–6 %	65 years, 11 months	18 years, 10 months
1960	2025	17,0	–8 %	66 years, 2 months	19 years, 1 month
1965	2030	17,3	–9 %	66 years, 5 months	19 years, 2 months
1970	2035	17,5	–10 %	66 years, 7 months	19 years, 4 months
1975	2040	17,7	–12 %	66 years, 10 months	19 years, 5 months
1980	2045	17,9	–12 %	67 years	19 years, 6 months
1985	2050	18,1	–13 %	67 years, 1 month	19 years, 8 months
1990	2055	18,1	–14 %	67 years, 2 months	19 years, 10 months

Source: NSIO 2004 Annual Report, page 45.

The NSIO has not published details of the calculations behind Table 4. A reasonable interpretation is the following:

¹⁷ The choice of starting year for the comparison seems natural. Thereby the first cohorts that reaches 65 with pensions under the new rules become the basis for the calculation. As a matter of fact it should have been the birth year cohort 1938 to match this criteria. The difference between these cohorts, though, is insignificant for the comparison made here.

¹⁸ The effect presented in Table 4 refers to the PAYG part of the earnings related pension. But it is presented in Annual Reports as describing the performance of the two schemes, the PAYG scheme and the Premium Pension combined. Presumably, this follows from recognition that the PAYG and the funded systems function in the same way when it comes to adaptation to increases in life expectancy.

- For retirement at age 65, those born in 1985 are expected to spend 21 years and 9 months in retirement compared to 18 years and 6 months for persons born in 1940. Persons born in 1985 will have pensions that are 13% lower than the pensions of those born in 1940.
- In order for persons born in 1985 to draw pensions at the same level as those born in 1940, they will have to work for an additional 25 months, with a remuneration at the same average level as before age 65. They will then spend 19 years and 8 months in retirement, so that their total time in retirement will increase by 14 months – i.e. of their increase in life expectancy of 39 months, 25 months will be accounted for by work and 14 by retirement.

This information only addresses the issue about how much longer people must work in order to offset the effect of longer life expectancies compared to the 1940 birth year cohort, and only as it follows from the rules in the new system. Questions remain about the starting point, the replacement rate for a person born in 1940, and other mechanisms that may operate and influence the size of pensions in the future, besides increasing life expectancy for cohorts born after 1940. These questions can be addressed using the cases presented in table 3.

First, in the “model case”, a person born in 1940 with 40 years of average earnings and retiring in 2005 at age 65 have a replacement rate of 53%. This is slightly below the lower level of the 55-65% range that was set out in the objectives formulated in 1994.

Second, according to the Ministry’s calculations in the National Strategy Report (page 42), people born in 1985, who worked around two extra years with earnings equal to those of an average worker and retired at age 67 would increase their replacement rate from the 40.4%, that could be reached at 65, to around 46%. The two extra years would be what is needed in order to compensate for the longevity effect according to Table 4. But, this is not enough for an adequate pension according to the targets formulated for the reform. To reach the 53% replacement rate for persons retiring in 2005, around 7% must be regained. The National Strategy Report (page 16) shows that yet another two years of work is needed to reach that level. In other words, a retirement age of 69 is necessary for people born in 1985 even if they had no interruption to their careers. Even then, they will not have achieved the 55% target. For all other examples in Table 3 the result will be even worse, leading to lower replacement rates and, consequently, even bigger cost reductions than what is the result in the “model case”.

A part of the explanation why the analyses ends up as it does, i.e. that a much longer work career is needed than what is indicated by the longevity effect according to Table 4, can be found in Annual Report 2005. In that report the starting year for the comparison has been cut back to birth year cohort 2030, instead of 1940 as it was in previous reports. This means that the comparison in the table is made to the situation for those who reached 65 years of age in 1995, i.e. the year after the decisions on the principles guiding the reform were taken. From the new table it follows that the expected remaining life expectancy at age 65 for birth year cohort 1940 increased significantly between 1994, when the decision on principles was taken, until 2003, when the new pension system for the first time was applied to the calculation of new pensions, i.e. for birth year cohort 1938. The increase of life expectancy was more than one year. In the new pension system this increase of life expectancy calls for an increase in retirement age of 9 months in order to reach a certain replacement rate. In actual application, this increase is introduced from birth year cohort 1938 onwards, following the transitional rules. For persons born 1985 the new table indicates a retirement age that is 10 months higher

than earlier version, i.e. than table 4. Hence, 10 months out of the more than two extra years needed to reach the lower level of the range of target replacement rates are explained by the effect here described. Other effects, so far not officially recognized, account for the rest of these extra years.

Some further insights can be gained from the OECD publication *Pensions at a Glance*, where pension systems in OECD member states are studied.¹⁹ A Swede with earnings equal the economy-wide average starting work at age 20 in 2004, working for 45 years, and retiring at 65 in 2050 would have a gross replacement rate of 47,1% from the PAYG and Premium Pension schemes combined²⁰. In this case, even after 45 years of work, the replacement rate is below 50%. The OECD calculations illustrate that it is not enough to work a certain number of additional years. The additional years must be combined with a later retirement in order to have a sufficiently low annuity factor to generate an appropriate pension.

Clearly, the increase in retirement age and working career length needed for an adequate pension has gone beyond the 1994 intentions, as they were formulated in the decisions on principles that year.

Relative pension levels

The NSIO Annual Reports also look at relative pension levels. In those calculations the relative pension level is defined as the average initial pension granted in a given year as a proportion of the average wage in the same year. It is only earnings below the ceiling for pension carrying earnings that are taken into account. The population for which the calculation is made consists of all persons who have reported pensionable earnings for 30 years or more. Average wages are calculated over the whole range of possible working years, from 16 to 64. Obviously, this produces relatively low earnings levels in the denominator of the ratio.

According to the 2004 Annual Report (page 45), the base scenario relative pension level at age 65 are 68% for the 1940 birth year cohort and 51% for the 1990 cohort.²¹ Of the 17 percentage points reduction in the average pension level, seven are attributed to expected

¹⁹ The base line case in the OECD calculations in the 2007 edition of *Pensions at a Glance* has the following characteristics

- Begin work at 20 years of age and work until normal pension age, in the Swedish case assumed to be 65 years.
- Real earnings growth 2%.
- Real rate of return on investments of pension funds 3.5%.
- Individual earnings growth is equal to the growth of economy-wide average earnings
- Demographic development as 2002 UN demographic projections for the year 2040.

Differences in assumptions of rate of return and mortality tables between the OECD calculation and the NSIO calculations in Table 4 are negligible when it comes to interpreting the result in terms of working years needed for a certain pension.

²⁰ It is assumed that the OECD modelling of the occupational pension ends up in a replacement rate of 15 percentage points, which are deducted from the relevant country table.

²¹ In the base scenario 2% growth in average real wages and a 3.25% rate of return on pension fund investments are assumed.

increased longevity. About the balance of the decrease, 10 percentage points the Annual Report 2004 states:

“The remaining decrease is partly due to the fact that the calculations are for persons with 30 or more years of work in Sweden. Compared to the new system, the ATP system is particularly generous toward persons who have worked only 30 years.”

The explanation offered in the Annual Report indicates that the additional reduction above the longevity effect is to a large extent the effect of the gradual phasing out of the former ATP system over the 17 years transition period, primarily, the switch from the old 15/30 years perspective to a life time perspective. And this fact represents a corresponding reduction of costs during the transition period, up until the year 2018 that is.

Now, even in this respect, later Annual Reports offer alternative aspects. The significant impact on pensionable age, caused by the demographic development between 1994 and 2003, introduced by NSIO in Annual Report 2005 and discussed in the preceding section, affect newly awarded pensions only gradually, thanks to the transitional rules. Consequently, the resulting reductions of average pension levels are introduced only during the transitional period. Following this, data reported in the Annual Reports 2005 and 2006 differs significantly from what has been reported in 2004. They also differ from each other. No analyses of these differences are to be found in the reports.

The result of this discussion becomes, that NSIO data indicate a reduction of average pension levels for pension at 65 of 17 percentage points between cohorts born 1940 and 1990 respectively. Of this difference 7 percentage points should be due to the development of demography between 2005 and 2050 and 10 percentage points be due to other factors, one being the gradual introduction of the result of the demographic development between 1994 and 2003, another being the switch from the old “best 15 out of 30” formula to the life time perspective.

A comparison between what is said in this section about relative pension levels and the preceding section on replacement rates becomes the following

Table 5. Comparison of development of replacement rate and average pension level

	replacement rate "model case"	average pension level
birth year cohort 1940	53	68
birth year cohort 1985/1990	40	51
reduction over the period studied, percentage points	13	17
As % of the 1940 rate/level	25%	25%
reduction due to demography after 2005 over the period studied, percentage points	7	10
As % of the 1940 rate/level	13%	15%

As can be seen in table 5, there is a remarkable consistence between the development of replacement rates in the “model case” according to the ministry and the relative pension levels according to NSIO²². It is only the absolute level that differs, due to some very specific

²² The differences between outcomes for birth year cohorts 1985 and 1990 is of no significance for this comparison.

assumptions used by NSIO in its calculations. The Ministry's approach is what follows from EU's recommendations about how to calculate adequacy of pensions. The same basic approach is also applied by the OECD. This is also the approach used when the targets for the Swedish pension reform were formulated back in 1994.

The automatic balancing mechanism

As already pointed out above, official projection show, that an activation of the automatic balancing mechanism might be avoided, in spite of an adverse demographic development in the next few decades. This depends on a whole range of reasons, particular for that period. Some of them have already been mentioned. A summary including some further elements is the following.²³

- Pensions are being reduced for other reasons than an activation of the balancing mechanism. One reduction of pension levels that follows by the new rules is the longevity effect, i.e. the taking into account the life expectancy when establishing the annuity factor. This is a sustainable effect, built into the ordinary rules. But, beside this, as have been analysed in preceding sections, pensions are lower in the new system than in the old one, and this affects actual pensions gradually more as the transition process progresses.
- The existence of a big buffer fund meets the strains of the baby-boomers.
- During a long transition period and from the point of view of the total pension level and replacement rates there is in reality a gradual increase of contributions. It is the contribution to the Premium Pension scheme, that effectively functions as an increase in contributions to the earnings related public pension. In 2005, the contribution from the Premium Pension scheme to an individual's pension is negligible. In 2050 the Premium Pension scheme contributes to "a full pension" with 2.5 percentage points out of a total contribution of 18.5%. This is equivalent to an increase of contributions of 2.5 percentage points to the combined earnings related pension²⁴.

In spite of these factors it is probable that the automatic balancing mechanism will be activated in the near future, although not with as far reaching effect as would have been the case without these other factors. But those effects will be in addition to all the other reductions. As a matter of fact, the balance number is close to unity. In 2005 and 2006 it was only an exceptional development of stock market values that boosted the buffer fund's assets and thereby prevented the balance number from falling below unity. In this section we will present the latest official projections on this matter and study the possible effects of the balancing mechanism being activated.

The NSIO makes calculations about the effect on the balancing mechanism under different scenarios. Those scenarios have been very much the same in the latest Annual Reports, although the development over the last couple of years have been above average and strengthened the point of departure for the calculations. In the Annual Report 2006, published in Swedish in April 2007, the following assumptions were made.

²³ For details about the factors operating behind the automatic balancing mechanism and its result by way of reduced pensions see Chichon in SIQ Issue Nr 2 2005 and Scherman in Issue Nr 2/2006

²⁴ The reality is slightly different. During the transition period, the contribution to the PAYG sub scheme is higher than its long range permanent level. In 2001 it is 16,4% in 2018 it reaches the level 16%. The contribution to the finances of the PAYG scheme of this transitional arrangement is only around 30 BSEK over the period 2005 to 2018.

Table 6. “Assumptions” as a basis for calculations of the performance of the PAYG scheme

	Base scenario	Pessimistic scenario
Fertility	Up from today 1.77 to 1.85 in 2010, thereafter constant	Down to 1.65 by 2010
Increased life expectancy	Down from 36 days per year today to 15 days per year in 2050, thereafter constant	
Participation in the labour force 16-64	Around 77%, approximately the same as today	
Immigration	26000/year until 2015, thereafter 23000/year	17000/year until 2015, thereafter 15000
Growth in average real wages	1,8%	1%
Return on investments	3.25%	1%

Source: NSIO 2006 Annual Report, pages 25 to 30.

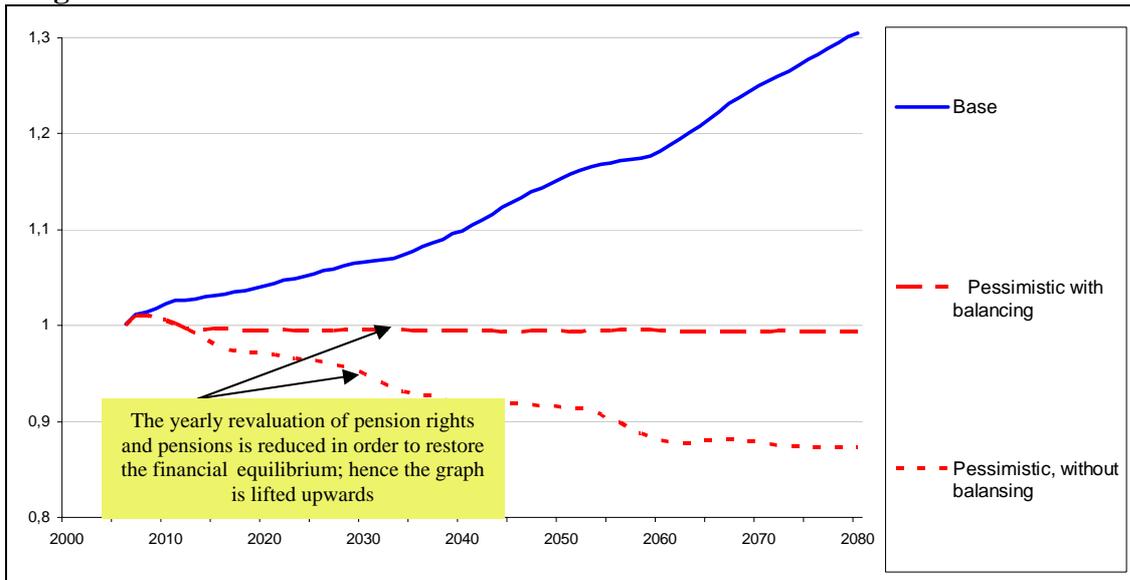
An “optimistic” scenario was also studied, differing from the base scenario by assuming

- a higher employment rate; 79%
- a higher increase in wages; 1,8% p.a. until 2010, 2% thereafter, and
- a real rate of return on investments after costs, of 5% p.a.

The optimistic scenario is of no further interest in this context, where the risk for the balancing mechanism to be activated is to be studied. But it is worth mentioning that the result of this optimistic scenario would be a veritable explosion of the buffer fund, calling for yet further automatic mechanisms or for discretionary action, should the “optimistic” scenario materialise.

In the following diagram the development of the *balance number* up until 2080 in two scenarios, the basic scenario and the pessimistic one, is illustrated.

Diagram 3. The Balance number in two scenarios

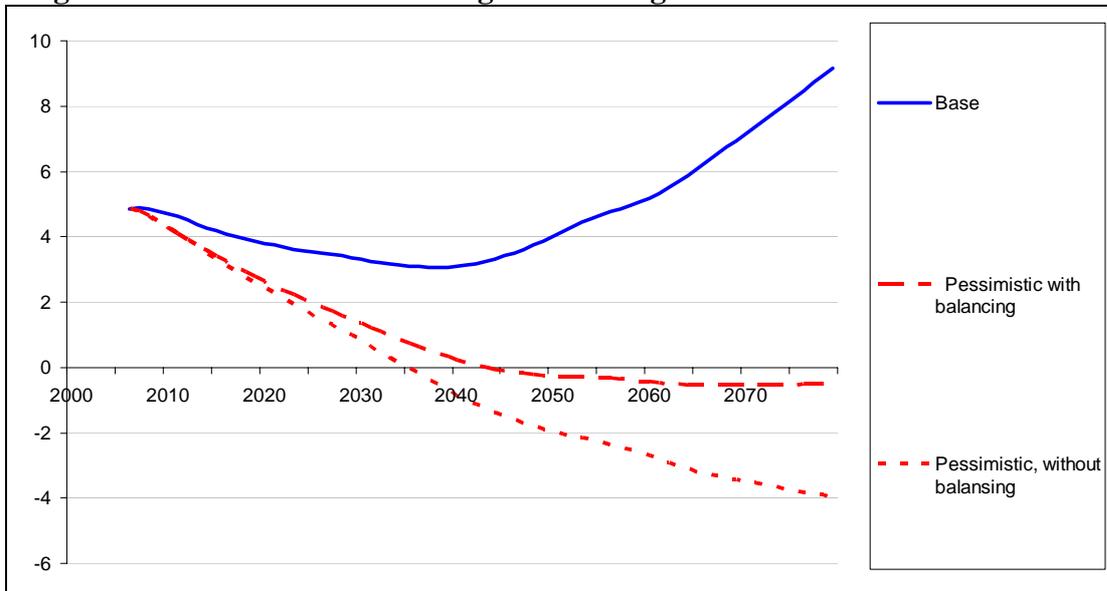


Source: NSIO corresponding to Annual Report 2006, page 27.

Under the “pessimistic” scenario, the balance number falls below unity in 2009 and thereafter there is a reduction in the yearly revaluation of pension rights and pensions in order to restore the balance. This causes the balance number to stabilise around 1,0. Without the automatic balancing mechanism the balance number would fall as the lowest, dotted curve indicate. And, as we will see in next diagram, the buffer fund would fall far below zero.

The development of the buffer fund in the same scenarios as for diagram 3 can be seen in the following diagram.

Diagram 4. The Buffer Fund strength according to two scenarios



Source: NSIO corresponding to Annual Report 2006, page 26.

About the basis for the calculations the following deserves to be said:

The assumptions behind the *basic scenario* are fairly optimistic, compared to history and conservative estimates.

- Growth in average wages is assumed to 1,8% p.a. which is higher than what has been the case during most of the last 50 years
- Real return on investment of the pension buffer fund is assumed to 3.25% p.a. Many economists warn against such assumptions. Especially so in a long period characterised by many pensioners as compared to the active population. Under such periods assets are sold to free capital for consumption. Moreover, today, after a range of years with extremely high returns on the stock market the assumptions made are equivalent to an assumption that the current record level shall become the average level. Such assumptions seem adventurous.²⁵
- The assumptions about immigration are high.
- The assumption about fertility, 1.85, is high compared to recent decades and also high compared to other European countries.
- The assumption that the increase in life expectancy will come to an end around 2050 seems to run counter to what most demographers believe.

All these factors are of importance for avoiding an activation of the automatic balancing mechanism. In the Annual Report 2003, the NSIO discusses a couple of fairly small deviations from the assumptions made in that report as a basis for the basic scenario and shows that they are enough to cause an activation of the balancing mechanism. Those assumptions were generally speaking the same as today, with the exemption of the exceptional stock market development. This has made the risk for the automatic balancing mechanism to be activated to seem to have decreased.

After all, nothing can have happened over the last couple of years that can reasonably change any serious estimation of the development over such long periods that are discussed here. In fact, calculations for a period as long as 75 years are hardly appropriate for any accurate forecasts of the future. Factors determining actual outcomes cannot be estimated with any degree of certainty. But such calculations can be used as illustrations of how the system will function under certain, preset conditions. And the calculation illustrates the risks transferred onto the individual, risks that come over and above the reductions brought about by other measures, described above.

When it comes to the effect on pensions the following is worth mentioning.

According to the author's own calculations²⁶ of the effect on the level of the pensions in the "*pessimistic*" alternative under the conditions presented in the 2003 Annual Report the following could be reported.

- For a person born 1990 the first year PAYG pension becomes 8.6% lower than it should have been without the balancing mechanism being activated. The yearly revaluation of the pension after retirement is reduced by 0.5% p.a.

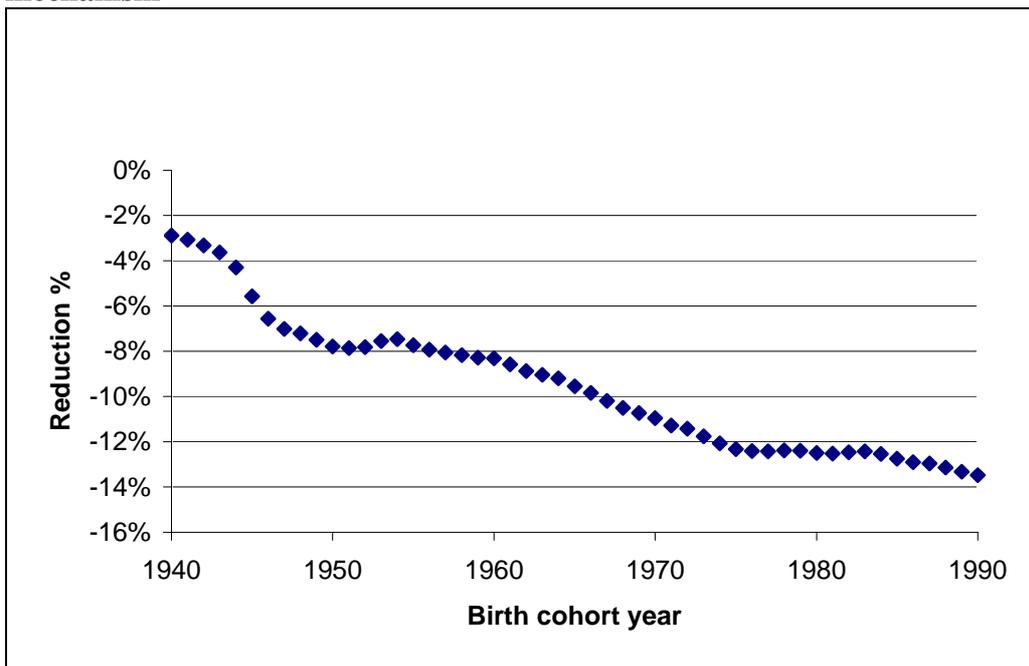
²⁵ But even this statement can be challenged. Over the last decades the world economy has seen a dramatic change in the distribution of national income between wages and capital, with the part allotted to wages substantially diminishing. If this change is sustained or even aggravated the current record level of equity values might prove to be the normal level.

²⁶ See Scherman (2004)

- For a person born 1954 the first year PAYG pension becomes 3% lower than it should have been without the balancing mechanism being activated. The yearly revaluation of the pension after retirement is reduced by 0.5% p.a.

The current value at the time of retirement of the reduction of the yearly revaluation of pensions in payment can, according to a simple rule of thumb, be estimated as ten times that reduction. Hence, the total reduction of the value of the pension for a person born in 1990 is 13.6% ($8.6+(10*0.5)$) and for a person born 1995 it is 8%. A diagram shows the effect of the activation of the balancing mechanism for birth cohorts from 1940 to 1990.

Diagram 5. Reduction of PAYG pension as a result of the automatic balancing mechanism



Source: Author's own calculations, based on data provided by NSIB

The reductions under this pessimistic scenario can be applied to the “model case” in the Ministry’s calculations in the National Strategy Report. The PAYG pension for the birth year cohort 1985 would be reduced by around 13%. To compensate for this effect, around two years more employment is needed, and the retirement age becomes 71 years.

From the discussion in this section it follows that the belief that a NDC scheme would automatically be in approximate balance provided certain rules that were formulated in 1994 are followed is wrong. The automatic balancing mechanism, which was originally introduced as an “emergency brake” for exceptional situations, will be activated more frequently than expected. From the discussion it also follows that if Sweden can avoid using the automatic balancing mechanism it is only because different measures to counter a deteriorating demographic situation are implemented. However, at some point, when the benign effect on the pension system’s finances of the special factors which operate during the transition period no longer apply, the automatic balancing mechanism will start to take effect, should a new wave of adverse developments occur. At this point, the strain of for instance low fertility, low labour force participation and an aging population combined with an unchanged contribution rate will fall on the level of pensions and cause the replacement rate to fall significantly.

It is important to realise that the results here described will apply to every pension scheme with a constant contribution rate and unchanged rules for calculating pensions. In NDC schemes indexed to the sum of wages, which is the most common design, this effect is not obvious, but this is only because such systems lack the transparency in the Swedish scheme with its combination of indexation to average wages and the automatic balancing mechanism. Decreasing replacement rates result not primarily from the balancing mechanism, but rather from the intention to keep the contribution rate unchanged whatever happens.

A SUSTAINABLE SYSTEM?

All over Europe, the demographic development causes concern. The reason is that projections show a dramatically increased burden on the active generation over the coming decades. The combined effect of large cohorts reaching retirement age and rising life expectancy will be a doubling of the old-age dependency ratio, i.e. the number of people of retirement age (65+) in relation to the working-age population (15-64). In the year 2000, the over-65s represented about one quarter of the working-age population; by 2050 it will be nearly a half. The potential impact of these demographic developments on pension systems and public finances in general cause serious concern.

Important ways to meet the challenge are

- reform pension systems,
- improve employment,
- strengthen public finances in order to make public budgets prepared to bear a heavier burden in the future.

Sweden is often mentioned as a country that has successfully met the challenge. And it is obvious that the new Swedish pension system has gone a long way in establishing sustainable pension system finances. But this result has been achieved at the cost of transferring large risks to the pensioners. We have seen that the replacement rate at retirement age 65 is reduced significantly over the period 2005 to 2050. Even in a base scenario the replacement rate from the public earnings related scheme drops from 53% to 40%. Under a pessimistic scenario, where the automatic balancing mechanism is activated, the replacement rate falls even further.

In the following, an assessment of the reform will be made along the following lines.

- Does the new system offer financial stability and adequate pensions?
- Does the new system meet needs for a coherent old age policy and for social justice?
- Does the new system meet the need for a proper balance between retirement ages and employment opportunities?
- Transparency and Democracy: Has the reform been carried through in an acceptable manner? Is the information to the general public adequate?

Overriding issues, relevant in all these four dimensions are

- Does the new system offer a fair sharing of risks between the individual and the general public, represented by the state?
- Is it possible to understand the system?

The earnings related pension system is financially stable

When it comes to reforming the pension system itself, it is obvious that the new Swedish public pension model fulfils the criteria of financial sustainability when it comes to the earnings related pension system as such. This goes with-out saying for the funded component. In the PAYG component the automatic balancing mechanism takes care of a corresponding function. Still, the overall sustainability of the public finances is not secured.

We can see it in this table, dealing with the pension system as such and with the state budget.

Table 7. Finances

Item	Present situation	Future situation
Finances of earnings-related pensions	Stable	Stable
Contributions from the state budget for social security benefits	High	??
Amount of minimum pension	Fairly high	Successively lower in the face of economic growth
Costs of minimum pension	Modest	Diminishing

...but the over all sustainability of the public finances is not secured

From the table we can see that the overall sustainability of the public finances is not secured. One reason is that interdependencies between the state budget and the pension system exist, and they exist independently of the automatic and “autonomous” earnings-related pension system. This is so when it comes to the guarantee pension that is financed by the state budget. Moreover, of the total contributions to the earnings related system around 15% comes from the state budget, to cover pension rights for periods with benefits due to unemployment, sickness, child care etc. The development of expenditure on guarantee pension depends, as much as anything else, on the development of earnings related pensions. The development of the state’s contributions to the earnings related schemes depends on whether or not the current high rate of absenteeism due to sickness and disability can be reduced.

... and the replacement rate is not adequate

In the formulation of the replacement rate target for the 1994 reform it was stated that a certain replacement rate should be obtained by a person who worked “at a normal extent”. What is meant by “normal extent” was never defined.

As we have seen even individuals who work 40 year on average earnings will suffer significant reductions of the replacement rate during the period 2005 to 2050. For a person who have worked only 30 years the reduction will be even bigger. These reductions go far beyond the reduction following from the longevity reductions and, obviously, the replacement rates are lower than was set as an objective for the 1994 reform.

An in depth analyses of the Swedish case requires comprehensive actuarial calculations. The calculations that were the basis for the 1994 decisions must be reviewed in the light of demographic developments, and also with respect to changes in the rules in the pension system itself and in the tax system since the establishment in 1994 of the principles for the reform. The present evidence suggests that the expectation that 40 years work on average earnings and an 18.5% contribution rate would produce the target replacement rate will not be

fulfilled. Instead, 42 years or more of work were required already under the demographic conditions prevailing when the reform was adopted.

In this context, there are also reasons to study the situation for today’s elderly. Sweden has had an exceptionally favourable development of the economy and of wages over the last decade. The retired population has not received an extra increase in pensions that match this development. Hence, income disparities have grown. This can be remedied either by an extra increase of pensions for those 70 or older, or by an decrease of the “norm” used in the indexation of pensions in payment, i.e. the 1,6% p.a. that is deducted from wage increase when the indexation is calculated. A complete abolishment of this norm would cost some 3 percentage points in increased contributions. It is to be recommended that the norm is discussed in the context of a full review of the new pension system, while the problems for today’s older pensioners preferably should be remedied by extraordinary measures, financed out of general revenue.

...and the need for a coherent old age policy is not met

In designing pension reform it is important to take into consideration that the adequacy of pensions depends on many other factors than the pension system alone. Different welfare models differ considerably regarding the state’s responsibilities for offering welfare arrangements for its citizens. Regardless of one’s opinion of the degree of state responsibility it is obviously important to keep in mind that Security in Old Age depends not only on pensions systems.

A feature of the Scandinavian welfare model is that it provides a set of benefits in kind, often comprehensively subsidized for all. A table may summarise the Swedish situation

Table 8. Health care, care for the elderly and other benefits in kind

Item	Present situation	Future situation
Availability of in-kind benefits	Comprehensive	??
Cost-sharing for in-kind benefits	Low	??
Public costs of in-kind benefits	High	??
Availability of adequate health care	Good	??
Cost-sharing for health care	Low	??

Nothing is known about the future of these benefits, neither about the ability to finance them, nor about the general attitude towards a continuation of the Scandinavian welfare model. But already today representatives of regional and local governments are talking about huge problems to sustain the system.

This adds to risk, and the dilemma cannot be solved simply by trying to formulate policies and make forecasts of costs and social outcomes in all dimensions. The future is uncertain and will remain so. The present cannot prescribe what the future will be. Consequently, a totally automatic public pension system cannot, realistically, prevail.

...so, the automatic balancing mechanism must be rescinded

As the discussion above showed the finances of the new Swedish earnings-related pension schemes are secured. This is brought about by reducing pensions under a whole range of rules, but ultimately by the automatic balancing mechanism. The automatic adjustment mechanism in the PAYG component sees to it that *all risks of an imbalance in the finances of*

the earnings-related schemes are borne by the individual. This runs counter to the basic idea of a balance between social goals and financial constraints. Therefore, the system must be changed so that *the automatic balancing mechanism in the PAYG earnings related scheme is rescinded.*

...and contributions must be increased

In old age policy the key is to strike a fair balance between retirement age, benefit levels and contribution rate. It is not probable that such a balance can be struck at anyone contribution level that is fixed for the indefinite future. That is especially so in the current European situation. The deterioration of the old age dependency ratio depends only half on increased life expectancy. There is no reason whatsoever to attribute the other half to something that should primarily be born by the baby boom cohort. Instead it is a challenge to be born by the whole society.

The Swedish reform does not observe this precondition. Instead it sets a contribution rate that is meant to be unchanged into the indefinite future. This causes the replacement rates to fall sharply and unfairly. This observation goes also for the nearest decades, even if contributions in reality are increased as the Premium Pension is successively introduced and, consequently, pensions are not reduced as much as they should otherwise have been. In spite of this fact and as discussed in this paper, contributions need to be increased. How much depend among other factors on how the labour market develops.

From this it follows that *the basic principle of the new PAYG-NDC system, the unchanged contribution rate, has to be abandoned.* Following this the design with contributions themselves as the basis for pension rights must also be abandoned, thereby “decoupling” the inflexible tie between contributions and pensions.

...and further changes are also needed in order to meet the need for social justice

Even after having changed the system as just proposed, the reality is that individuals will have to work more and longer in order not to overburden the active generation. The public responsibility becomes to be clear and transparent about what is needed and to see to it that there are realistic chances for the individual really to fulfil his obligations under the generational contract. For this some further changes are needed in the Swedish old age policy.

One vital measure is to see to it that people aged over 65 needs to have *access to the general welfare system as well as social insurance under the same terms as younger people.* Today, even though the age at which a decent pension can be drawn is steeply increased the social safety net stops at 65.

Another reform need concerns the *guarantee pension.* The size of the guaranteed level for the pension is tied to inflation. If earnings increase at a faster rate than inflation, the guarantee will become less and less important with the passage of time. This design transfers successively greater poverty risks onto the individual. The government has stated that it finds it appropriate for the relative importance of the guarantee to diminish as real average wages grow. Such a development is contrary to what is usually considered to be a basic objective of most public pension systems, and certainly has been a basic objective of the old Swedish welfare model. Such a policy is not acceptable and it lacks fairness and political credibility.

Reforms need to include a raising of the retirement age

First and foremost, a necessary condition for improving the situation and hinder a reduction of replacement rates of the magnitude projected for Sweden, is that people work more and up to a higher age. Even after having made the changes proposed above, i.e. restoration of benefit levels to what was the stated target for the reform, abolishment of the automatic balancing mechanism, increasing contributions by a realistic amount and changing old age policy so as to meet the need of social justice, the longevity effect remains. As a matter of fact, it seems reasonable that *more than three years should need to be added to the working career between 2005 and 2050* in order to retain a fair balance between pensioners and the active generation. This calculation is made based on the assumption that those extra years correspond to a later retirement, that will make the pension savings being spread over a fewer number of years. For the sake of a proper balance of responsibilities between the state and its citizens this fact should be established by a statutory retirement age that indicates at which age it is meant that an adequate pension should be provided.

The reasons for establishing statutory retirement ages and minimum retirement ages deserve to be elaborated upon.

First, the generational contract is about the active generations paying for the retired. As we now-a-days very well know this fact can not be avoided by changes in the pension system. It is always the active that pay for the retired, regardless of technicalities. When life expectancy increases, and without postponing retirement, the younger generations would have to pay more, substantially more, for upholding their part of the contract. But this is not fair. The contract, supposedly, is concluded under assumptions of a certain number of years in retirement, although this is not explicitly stated. When life expectancy increases the contract must be “re-negotiated”, and some sort of split between the active and the pensioners of the extra burden is what can be regarded as fair. And such a re-negotiation can not be superseded by an “actuarial reduction” of the pension amount.

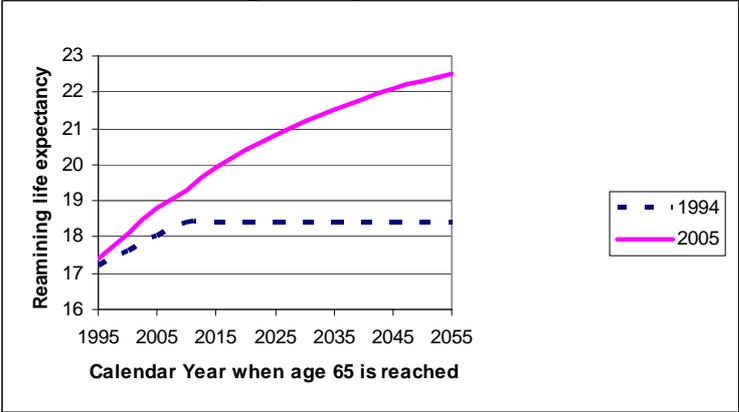
Second, the idea behind an “actuarial” adjustment of pensions to reflect the individual’s retirement age is that it should offer a remedy for extra costs for the pension scheme that would other-wise be incurred by an early retirement. Such an adjustment means that the yearly amount of the pension is reduced to such an extent that the total consumption opportunities for an individual are reduced and that the remainder is spread over a longer life span. However, such an adjustment does not meet societal needs. This observation follows from the fact that the actuarial adjustment that is made does not compensate the national economy for the loss of output, consequent from people withdrawing early from employment, nor for the loss of taxes that follows from an individual’s choice to retire early. In other words, the idea of “neutrality” on the part of the state to at what age a person retires is misplaced. Instead, a standard retirement age is necessary with a gradual increase in the face of an increase in life expectancy. Furthermore, a minimum age at which a public pension can be drawn must be stated and successively increased as well.

Third, it is important to recognise that the way people might behave when the system leaves it to them to choose when to retire is not clear. Many believe that the incentive to work longer, or to save more, is weak. What will generally happen is that people will draw their pension as soon as possible and will accept a lower standard of living. Others believe that, in the long run, the design of the pension will affect attitudes and opportunities in society. Whichever is correct, it is obvious that the availability of work opportunities will be of significant importance for the “choice” individuals make. Without any jobs to seek, “flexibility” and

“freedom of choice” is of no value for the individual; he or she is in practice forced to retire, although under this new regime, “based on their own decisions”.

Moreover, from the point of view of the individual, the existence of a statutory retirement age is of importance when it comes to his or her understanding of the pension system. It is a matter of transparency. The extent of the uncertainty, the extent of the need for regulation is well illustrated by how the estimation of remaining life expectancy at 65 has developed between 1994, when the decisions on principles for the reform was made and the situation today. For the birth year cohort 1985 the assumption about remaining life expectancy at 65 today is four years higher than the 1994 estimations. We can see this in diagram 6.

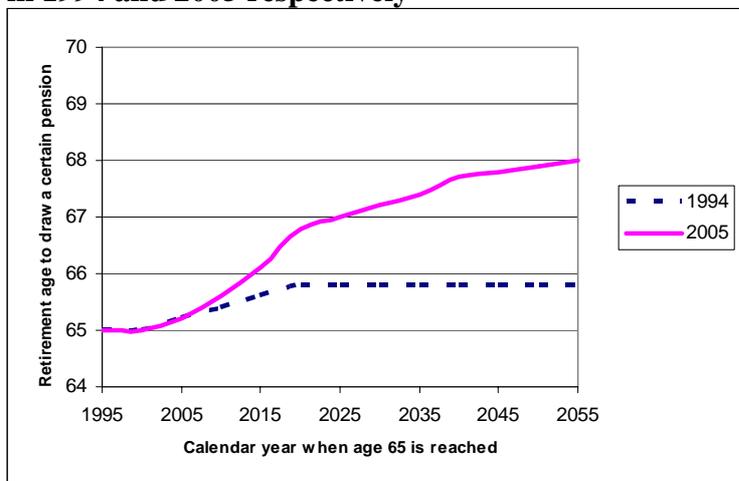
Diagram 6. Remaining life expectancy, as assumed at 1994 and 2005 respectively.



Source: Proposals from the Pensions committee, SOU 1994:20, page 513 and Appendix A, SOU 1994:21, page 17-34, and Pensions Annual Report 2005, page 50

During the transitional period, 2003-2019, any new pension is calculated with a successively larger part coming from the new system. At the same pace they are subject to the increase of retirement age, needed to reach a certain pension, that occurred already before the new rules begun to be used, i.e. even before 2003, and by the additional increase of life expectancy that has occurred since 1994. The compound effect becomes very large, as can be seen in diagram 7.

Diagram 7. Retirement age in order to draw a certain pension, as it could be drawn at age 65 before the reform was implemented and at the life expectancy prevailing in 1994 and 2005 respectively



Source: Proposals from the Pensions committee, SOU 1994:20, page 513, Pensions Annual Report 2005, page 50 and authors own calculations

The calculations made in 1994 indicated a need for raising the retirement age by less than one year up until 2019, i.e. for a person that is 53 years of age in 2007. From then on it was assumed to be constant. Today's forecast for the same person is an increase of retirement age of more than one *additional* year. For younger cohorts more than two years must be added to the 1994 expectations. And these figures are for those with the most favourable earnings profile. For other groups more years must be added.

These diagrams illustrate the difficulties facing individuals when making their planning for retirement. To understand "information" about the pension benefit under different assumptions about the development of demography, wages and of economy and about the age at which the pension is taken is not easy. By contrast, a "standard retirement age" is.

It is also important to realise, that a statutory retirement age, successively increased in the face of increased life expectancy also is a matter of clarity when it comes to the state's responsibility for employment. Having proclaimed a retirement age the state becomes involved in providing jobs. Talk about flexibility and free choice tends to relieve the state of becoming even involved in a discussion of this crucially important aspect of old age policy.

...but also to take steps to improve employment opportunities

The need for an increase in pension age places the focus on the labour market and on employment opportunities. A table illustrates the situation today and in the future.

Table 9. Employment opportunities

Item	Present situation	Future situation
Employment opportunities for young people	Precarious	Hopefully improved
Employment opportunities for people aged 55-67	Comparatively good but much too low to meet the need	Probably improving
Employment opportunities for people aged 67-75	Non existent	??

There is an obvious mismatch between what has been done and the full extent of the automatic increase in pension age built into the new pension system. Some of this deficiency can be cured by the reforms proposed above about rescinding the automatic adjustment mechanism and restoring replacement levels. But still, already with a realistic and fair increase of statutory pension ages much remains to be done in the employment area.

It is necessary to make it possible to *continue working after age 65*. That requires laws or collective agreements that prohibit mandatory retirement (or at least mandatory retirement before at least the age of 70). However, not even such provisions can guarantee longer working lives. Work environments and employment conditions must be adapted for older workers, and there must be a change in attitude regarding their rights, and those of all employees, to develop their occupational skills and knowledge. There must also be a change in attitudes in the labour market, among employers, labour unions and older workers, themselves, regarding older people's ability and potential.

Young people need to enter the labour market at an earlier age than today. One reason is that this is needed for them to get a decent pension. Another is that the volume of work from young people affect the pension system's ability to pay today's pensions. Therefore, it is necessary to create conditions for the young generation to begin work earlier than today, but also to create the right incentives. The development over the last decades indicates that one or both these factors have been missing. In this context the pension formula needs to be reviewed. Is the life time perspective really appropriate, how realistic is it to expect people to work 40 years or more? This is the crucial question. It needs to be discussed, not the least in the light of labour market developments over the last ten years.

Conditions differ between labour market sectors and between groups of employees. It is a responsibility for the parties on the labour market to meet these differences, a responsibility that becomes more important the more the general retirement age is increased. But there is also a need to reform *the labour market for all*. This is a large and pressing issue; it must be placed at the centre of the debate. In the end the design of the pension system must be in harmony with what can be achieved at the labour market, as well as with generally accepted values in society.

...and to rearrange the division of responsibility between different pension sources

A consequence of the restrictive features of the new system is that people *have to resort to private arrangements* to a higher degree than before. This transfer of risks from the public to the individual exposes the individual to the dilemmas of myopic behaviour and insurance

market failures. These are risks that traditionally are seen as to be borne collectively. Their existence was the reason for public involvement in the first place

Whatever is done at the labour market peoples' working careers will differ substantially. This fact, together with a wish to offer effective pension arrangement for all, calls for a discussion of the scope of the public schemes. 30% of the population have earnings above the ceiling for pension carrying earnings. For proper pensions corresponding to these earnings they are dependant on occupational pensions or, for the self employed, to private insurance. But everyone with earnings above the ceiling is forced to pay the special tax levied on such earnings. Especially people with earnings that vary between years, those self employed are often subject to such variations, are disadvantaged by this tax. Years with low earnings give low pension rights. In years with good earnings, that should make it possible to set aside extra money for pension purposes, the earnings are hit by this extra tax. This is not fair and the special tax should be abolished. Given the vast complexities in arranging for ones own pension it would also be to prefer that *the ceiling for pension carrying earnings in the public schemes should be substantially increased.*

Transparency and democracy call for the opportunity to understand and to reflect,

For democracy to function people must be offered information that makes it possible to understand what is proposed. Moreover, there must be time left for reflection. If these prerequisites are not met, reforms will most probably fail.

...but a “paradigm shift” occurred only gradually and without being observed

Internationally there is a debate about which approach to reform is the best, a “paradigm shift” or “parametric reforms”. Paradigm shifts is characterized by a complete overhaul of a pension system as well as of the vocabulary used to describe reform needs and reforms. Such a shift has taken place in Sweden. Those advocating a “paradigm shift” often say that such an approach make it easier for the general public to understand and accept necessary changes. Others advocate successive reforms, with political responsibility retained in order that the generational contract can be monitored. The latter is the approach applied by Germany, France and the US – countries that, to date have introduced “mere parametric reforms”.

One reason why it has been possible to make a complete overhaul of the pension system in Sweden might be that it has occurred only gradually. It was the result of deliberations by a group of politicians in charge of implementing a reform of which, back in 1994 only the general principles had been agreed. The paradigm shift, itself, was neither agreed in 1994 nor was it ever presented subsequently as a change of those principles. One of the leading experts behind the reform rightly draws the following conclusion from the situation that gradually emerged: “As Swedish pension reformers had set out to create a (notional) defined-contribution scheme it was necessary to make sure that the system was financially stable. Otherwise it would have been logically inconsistent”. Hence the automatic balancing mechanism was invented and put in place.

However, the content of the 1994 principles was quite different. There, it was generally accepted that keeping a balance between social goals and financial constraints was to be a leading principle.

- Goals were formulated with respect to replacement rates that reflected what was socially acceptable.
- A wish for a stable contribution rate was clearly formulated, but the switch from a defined-benefit to a defined-contribution system was portrayed as the result of the introduction of a full working career as the basis for the pension rather than as an overriding principle.
- The financial constraints, or – more accurately – the absence of financial constraints, were formulated in the discussion about the buffer fund that became the backbone determining the financial performance of the system. In this context, the terms of the original documents that proposed the payment to the state budget of monies to compensate for some of the extra burdens that it would incur as a result of the reform are worth citing. After having described the proposed compensation, the text reads: “Of course these proposals affect, as has been described above, only the financial side. Neither the successive phasing in of the contributions, nor the transitional use of the buffer fund for other than old-age pension payments, affect the benefit side, that is obvious”.

In 1994, those responsible for the reform thought they could guarantee that the new rules could be kept in place for the foreseeable future, even if the level of contributions was to remain constant. It was claimed that the reserves accumulated in the old pensions fund would ensure this. There would be enough left over to compensate the national treasury for the extra burdens that the reform place on the state budget. In fact, the new pension system as designed 1994 very much resembled a traditional PAYG system, although with some interesting new features. This was also the way in which the reform was presented to the general public, especially by the Social Democratic party that was endeavouring to get its members to accept the reform.

Later on it was discovered that the financial situation was not as favourable as believed in 1994. Reserves were not sufficient to both cover pension obligations and compensate the national treasury. This was because it had become apparent that the demographic projections initially used were out of date. Adults were living longer, and fewer children were being born. Despite these altered conditions, large sums have been transferred from the fund to the national treasury. So far, SEK 258 billion has been transferred, which is roughly one-third of the fund’s reserves. And more is intended to follow. Instead, should the idea with an automatically functioning pension system be retained, the Treasury must be prepared to return recourses to the fund.

What happened was that the idea of the contribution rate being kept unchanged indefinitely *was allowed to become* a cornerstone of the reform, and that the wish to transfer funds to the state budget in the very same process was transformed from a result of projections showing that there was money left over in the buffer fund into one of the leading principles of the reform. As a consequence the automatic balancing mechanism was introduced. But, obviously, other solutions might have been found. When the projections and assumptions behind the initial reform proved unsustainable, the whole project should have been reconsidered and subject to open debate.

The collapse²⁷ of the projections behind the 1994 principles was never brought into the open and no public debate occurred. The result of the decisions made was that *social justice became the same as inter-generational balance defined as “having a constant ratio of present value of pension benefits over present value of contributions for all birth cohorts”*. This is the guiding principle behind the final design of the new PAYG system, with its automatic balancing mechanism. There is no room left for a political monitoring of the generational contract in the future.

The impression of a gradual shift of focus, and of a gradual retreat from political responsibility for the social outcome of the pension system is aggravated by a series of other features of the present situation. Among these is the government’s stated opinion that the value of the minimum pension shall diminish in the face of real wage growth. Another is the fact that the social safety net is not extended to higher age groups as the de facto pension age is increased. A third is the complete change of the funded component.

In 1994, it was stated that the funded scheme should include a guaranteed minimum yield and that the wish to provide for diversity in the management of funds should not be allowed to take precedence over the wish for security. The rules governing life insurance companies were mentioned as good examples in this respect. Ultimately, a completely different model was designed, with 800 funds for the individual to choose between and with no minimum guarantee. This complete overhaul was presented neither to the parliament nor to the general public as a change of principle. It is desirable for this situation to be changed. 800 funds is unrealistic as a range of funds in which individuals are supposed to make their own “informed choices”. Furthermore, a minimum yield is important to establish. Such a yield could also serve as the basis for forecasts about future pensions for individuals, thereby avoiding the risk of over promising. This would be a much longed for difference to today’s situation.

...and the process left the general public behind,

The changes necessary to make the system financially sustainable were mixed up in the changes of principles, and the reform leaves the general public behind. Four examples may illustrate this situation.

- *The increase in the pension age* that is brought about by introducing a factor dependent on remaining life expectancy in the pension calculation formula and by changing the rules for flexible retirement. On the basis of this, it is claimed that there is “free choice” and “flexibility”, when, in fact, what is happening is that the retirement age, as that concept is conceived today, will be gradually raised. Should the regular measures built into the system prove insufficient, the automatic balancing mechanism will take care of the need for an extra reduction in benefits, forcing people to try and postpone retirement yet further.
- *The reduction in the replacement rate* that is brought about by not merely increasing the number of years taken into account in calculating the benefit, but also by switching to a lifetime perspective, introducing a couple of non-contributory periods into the basis for the pension, and changing the indexation method from the price index to the wage index. A comparison of the new and the old system show “winners” as well as “losers” instead of only “losers”. This obscures the fact that the most important result

²⁷ It goes without saying that actuarial calculations must be revised from time to time. Sometimes the assumptions behind them are awfully wrong. But this situation does not justify talk about any “collapse” of the calculations. This label becomes motivated only when the calculations all of a sudden become the basis for a *totally automatic system*.

of the reform is the requirement for people to work longer under the new than under the old system to obtain a pension of a given level.

- *The lack of clarity surrounding the worth of the funded component of the pension* that is brought about by the design of the funded component with its confusing range of funds and with pensions solely dependent on whichever market return on investments that the individual can obtain. Every discussion on the merits of this component unavoidably ends up in complete uncertainty, since no one knows what the development will be in the future.
- *The fundamental change in welfare policy in the long run* that is implied by some elements of the reform. Particular mention should be made of the effective cut in the level of the minimum pension, since its level is indexed to prices and, relative to wages it will fall if there is an increase in average real wages. This change in welfare policy has never been discussed openly.

A consequence of this approach is that the “losers” only gradually realize what has happened and this hampers the political process. No one knows what part of the public response, a response that so far has been mostly total silence, is caused by ignorance and what part is an informed opinion.

...resulting, as it seems, in complete indifference to what happens

The scope of change of focus that the paradigm shift has caused can be illustrated by the following two examples.

The first concerns pension levels. In successive Annual Reports the estimated average pension level is discussed. The following table illustrates the figures from six years Annual Reports.

Table 10. Average pension level as estimated in Annual Reports 2001-2006

Average pension level at 65	2001	2002	2003	2004	2005	2006
Cohort 1940 (1938 in the first two columns)	69	69	64	68	70	66
Cohort 1990	51	55	50	51	54	53
Difference	18	14	14	17	16	13
Of the difference is due to life expectancy	9	7	7	7	8,5	9,6
Other factors	9	7	7	10	7,5	3,4

As can be seen, the estimation of average pension level for the birth year cohort 1940 ranges from 64 to 70 percentage points. The difference between these levels corresponds to 10% of the pension. The estimation of average pension level for the birth year cohort 1990 ranges from 50 to 55 percentage points. This difference too corresponds to 10% of the pension. Moreover, the explanation to the difference between the two cohorts, i.e. the distribution of the difference between “life expectancy” and “other factors” is not stable over the years. The NSIO has not commented on these differences between years, now-one else, be it media, politicians, union representatives or individuals in general, have asked about this. And, after all, at least the difference in estimated pension level *for a cohort due to retire*, i.e. birth year

cohort 1940, 10% as the difference is, would create big havoc in most countries. In Sweden the interest for pension levels seems to have vanished.

The second example concerns retirement ages. Above we have seen how much the estimations of retirement ages needed for a certain pension has increased between 1994 and 2005. We have also seen that the NSIO has changed perspective for their account for retirement ages between the 2004 and 2005 Annual Reports. This can be seen in table 11.

Table 11. Retirement age to neutralize the longevity effect, as indicated in the Annual Reports 2004 and 2005

Retirement age	2004	2005	Increase
Cohort 1940	65 years	65 years 9 months	9 months
Cohort 1985	67 years, 1 month	67 years 11 months	11 months

Once again, no questions asked, no debate. Even the interest for retirement ages seems to have vanished.

These are but two examples of highly interesting developments that have occurred without anyone noticing. It will be for the future to clarify whether a genuine change of minds or sheer ignorance is the explanation to this situation.

SUMMARY AND CONCLUSION

The Swedish reform has created a financially stable earnings related pension system. The basic approach; that a person has to work more and longer for a decent pension, is a realistic one. But the way this is achieved needs to be redesigned in order to meet the need for adequate pensions, social justice and transparency. Above all, the sharing of risks between the state and the individuals must be modified. The modifications needed can be done with a modest increase of the contributions and without changing the basic approach of the reform.

The scope of the liabilities in the public pension system is so large that the discussion of its future must cover the whole spectrum of public policy. We can count on abundant recourses over the coming decade, when the size of the active population will be particularly favourable as compared to the retired. During this period *it is important to save and to make well conceived investments*, investments that boost productivity and help a shrinking labour force to produce more, when the baby boomers retire and the dependency ratio deteriorates. *But increased contributions and more taxes must be allowed as alternatives in the discussion about the future.* Following this approach all different segments of the population become involved in the discussion. And, after all, that is urgently called for. It is not appropriate to handle one group at a time and leave other groups out. The purpose of the political process is to obtain a *fair balance*, between the elderly and those who are young, between families with children and retirees, between those who have a job and those who are unemployed, etc. A balance must also be struck between the various other public measures for the elderly, such as health care and care for the elderly, and what the public pension system offers. This balance must be created in a democratic process, where politicians and authorities acknowledge existing problems and are clear about demands and obstacles, as well s about opportunities and benefits. This process can not be superseded by an automatically functioning system. Hence, the automatic balancing mechanism must be rescinded. But the interesting and unique calculation methods developed in this context can be incorporated in an "early warning

system”, signalling when something tends to go wrong. Those calculation methods would thereby become incorporated, in a constructive way, in what has always been regarded as core values in the Swedish welfare model.

As can be seen from a description of the Swedish reform process, the belief that a “paradigm shift should add clarity and consistency to reform” is not backed by practical evidence. Instead, confusion becomes the result. When a well-known language, such as the language used in the decisions on principles back in 1994, is abandoned in favour of a completely new vocabulary, it becomes difficult even for those responsible for reform to keep track of what happens. The problems with the Swedish reform might very well and at least to some degree depend on a lack of understanding of the true meaning of the reform, caused of such confusion.

Any country that contemplates the introduction of an NDC system like that of Sweden – that is a system designed to keep the contribution rate unchanged – has to recognise that such a system means that, with a continuously aging population, pension levels will fall. The effect can be postponed by the existence of a buffer fund (as in Sweden) or the building up of such a fund, including a fund that is fed through an initial contribution rate higher than needed to cover current benefit expenditure. It can also be postponed by increasing the level of immigration. However, the strains imposed by societal ageing can not be avoided. In short, a NDC system, whatever kind it is, does not offer any way out of the hard questions on how to balance pension ages, contributions and benefits, today and in the future. *The Swedish example shows that a sincere desire to offer adequate pensions even when demographic conditions deteriorate requires the possibility of increases in the contribution rate as well as in the retirement age, and these elements should be indispensable components of any reform package. This is true today and it will be the case in the future.*

APPENDIX: ABOUT THE REFORM DEBATE

Public sources

As has been mentioned, the Swedish pension reform and the NDC model has become much observed in the international debate and by international organizations. Hence, EU, the World Bank and OECD have made many comments on the subject. Key documents from Swedish authorities have also been published in English. Basic documents, still are available only in Swedish.

The Swedish Government

Government bill 1993/94:250, with principles for pension reform (available only in Swedish).

Swedish National strategy report on Pensions 2005 to be found at

http://europa.eu.int/comm/employment_social/social_protection/docs/2005/sv_en.pdf

The Swedish National Social Insurance Office

The Swedish Pension System Annual Report 2001, 2002, 2003, 2004 and 2005, to be found at

<http://www.fk.se/sprak/eng/publications/index.php>

The 2006 report will be published in English in May 2007.

The European Commission

Synthesis report on adequate and sustainable pensions (SEC(2006)304, 27/02/2006),

commission staff document, by the European Commission, Directorate-General for Employment, Social Affairs and Equal Opportunities Unit E.4 to be found at

http://ec.europa.eu/employment_social/social_protection/docs/2006/rapport_pensions_final_en.pdf

Current and Prospective Theoretical Pension Replacement Rates, by the Indicators Sub-Group (ISG) of the Social Protection Committee 19 May 2006 –available at

http://ec.europa.eu/employment_social/social_protection/docs/isg_repl_rates_en.pdf

Other documents on Pensions from the European commission and the European Council can be found at http://ec.europa.eu/employment_social/social_protection/pensions_en.htm#adequacy

OECD

Pensions at a Glance - Public Policies across OECD Countries 2005 Edition

Pensions at a Glance - Public Policies across OECD Countries 2007 Edition (Pending for publication in June 2007).

The World Bank

The World Bank has published a comprehensive study of NDC, the concept and reforms.:

Pension Reform: Issues and Prospects for Non-Financial Defined Contribution (NDC)

Schemes. The publication is edited by *Robert Holzmann* and *Edward Palmer*. This volume analyses in detail the NDC concept as developed in Latvia, Poland, Italy and other countries, and first versions of most papers were discussed at a conference in Sandhamn, Sweden September 28-30, 2003. It also touches upon the specificities of the Swedish reform.

After an introduction by the editors the volume contains four parts with contributions from many well known participants in the international debate on NDCs.

In the first two parts the concept of NDC and its various specific features are discussed, opinions on its usefulness as a reform strategy are voiced and questions about implementation issues are dealt with. For example one article presents a comparison between NDC and the French and German point systems. Another put forward the NDC concept as a viable alternative for a coordinated pension system in Europe.

The third part presents Lessons from countries with Non-Financial Defined Contribution Schemes, including Latvia, Poland, Sweden and Italy. The fourth part discusses the Potential of Non-Financial Defined Contribution Schemes in Other Countries' Reforms, where reform needs and potentials in Austria, the Czech Republic, Spain and Japan are highlighted.

The International Actuarial Association (IAA) on NDC

IAA has issued a comment, dated May 9, 2006 (30 pages) to the World Bank publication *Old-Age Income Support in the 21st Century: An International Perspective on Pension Systems and Reform*. The document can be found at

http://www.actuaries.org/LIBRARY/Submissions/SOCSEC_World_Bank_final.pdf

In this comment IAA also analyse the NDC concept, including the Swedish reform.

A series of articles centred around the Swedish reform and related matters in the *Scandinavian Insurance Quarterly*

One source of interest is a series of articles in the *Scandinavian Insurance Quarterly (SIQ)*. This magazine presents articles in the Nordic languages and in English. It is issued under the auspices of the Insurance Societies in Denmark, Finland, Norway and Sweden. Readers are mostly persons engaged in the Insurance industry in the Nordic countries. The Magazine is also much used by researchers and often cited in scientific works. Articles in this series can be downloaded from <http://www.sff.a.se/?avd=forlag&sida=pension.lasso>

The series gives an elucidating insight in the debate on the Swedish variant of NDC, both as it is going on internally and internationally. The following articles have appeared in the series, with the authors own summaries attached.

Issue Nr 4/2002: *The Market for Social Insecurity: A shady pension reform entices economic elites*, by *Jan Hagberg* and *Ellis Wohlner*.

“An efficient national pension system that has helped to make Swedish old folks among the most economically secure in the world has now been replaced by a costly, elaborate construction which is almost certain to make the retirement years of future generations less secure”.

Issue Nr. 2/2003: *Financial and Inter-generational Balance? An introduction to how the new Swedish pension system manages conflicting ambitions* by *Ole Settergren*.

“The new Swedish pay-as-you-go pension system has been designed to be financially stable, i.e. regardless of demographic or economic development it will be able to finance its obligations with a fixed contribution rate and fixed rules for calculating benefits. This type of financial stability inevitably entails a risk that the value of pensions will vary over time. To minimise this variability, while at the same time securing the financial stability of the system, it has indexing rules that work asymmetrically. The aim of a stable pension level is attempted by basing the indexing of the systems liability on the growth in average income. As the growth in average income normally will deviate from the systems internal rate of return

this index implies that assets may grow faster than liabilities, or vice versa. If and when liabilities should exceed assets, the basis for indexation is automatically switched to an approximation of the system's internal rate of return, thus automatically adjusting pension levels as well. The pension level is automatically re-established, as is growth in average income as the basis of indexation, as soon as this is possible without undermining the financial balance of the system. Only historic transactions are used to calculate the liability and the assets."

Issue Nr 2/2003: *Pension reform based on sound principles* by Bo Könberg (Original article only in Swedish).

"The author oppose to the critique towards the pension reform put forward by Hagberg and Wohlner (Issue nr 4/2002). Mr Könberg argues: The opposition to the reform has gradually subsided and the adversaries, i.e. the left party and the greens, have completely different ideas about what should be the alternative. Basing the pension level on the full working career is a more just principle than the old benefit formula. The new pension system gives a lower pension – at the same level of life expectancy- than the old one only if growth is lower than 2%. At such a low level of growth it would have been necessary to increase contributions substantially. The new system builds on transparent principles which the old one did not.

Issue Nr 4/2003: *The Swedish pension reform: a good model for other countries?* by KG Scherman.

In this article I will discuss the Swedish Pension reform in the light of the international debate. My main point is that the core issue in a pension reform is to uphold an open and transparent generational contract, with a fair balance between active and retired today and in the future, and to maintain a political responsibility for monitoring the contract. The new Swedish pension system has transferred all financial and demographic risks onto the individual and is meant to function automatically for an indefinite future. Hence, it does not fulfil this basic task of a public pension system and it has simply become the latest example of an attempt to avoid the realities of the dilemma facing aging societies. It is not a good model for other countries

Issue Nr 1/2004: *The New Swedish Pension System - a Fair and Sustainable Model* by Bo Könberg.

In this article I comment on some of the many critical comments that KG Scherman made in his article (NFT 4/2003). I try to concentrate on points that I have not commented in my reply (issue nr 2/2003) to Hagberg-s and Wohlner-s article (issue nr 4/2002). I notice that Scherman agree with me that a reform was necessary, that in the future people will have to work longer or save more as life expectancy increases if they want the same relation of income and annual pension and that it is very important to improve employment opportunities, especially for older persons. I criticize him for presenting a misleading picture of many parts of the 1994 reform, for being very vague on what financing of his implied improvements would cost the active population, for advocating a system of recurrent negotiations between the political parties which most probable would lead to more abrupt and unpredictable changes than the system of rules that are an essential part of the new Swedish pension system.

Issue Nr 2/2004: *The pension reform debate* by KG Scherman.

Over the last decade an intense debate has been going on about pension reform. Following political problems in reforming traditional DB systems, but also for a variety of other reasons, new models have been introduced and intensely advocated by their respective proponents.

Issue Nr 2/2004: *Evaluating Pension Reform* by Bernard H Casey.

The intention of this article is not - pace Shakespeare - to praise the new Swedish pension system - but also it is not to bury it. Rather it is to lay out some of the basic premises on which retirement income systems are predicated. It tries to make explicit notions that are often implicit and sometimes not addressed at all. Discussion of the relative merits of -NDC-type- systems, or of pension reform more generally, cannot take place without this being done. It is necessary to consider not merely public pension systems, and as importantly, private pensions systems that interact with them, but also employment systems that provide work for older people and social service systems that provide care to those unable to help themselves. It is also necessary to make clear what objectives particular reforms are trying to achieve. Normally, these are multiple and, in so far as they are, there are ordered. The hierarchy in

question need to be made clear as much as do the objectives themselves. The article argues that only if reform is sufficiently encompassing, and only if it is sufficiently transparent, will it be sustainable.

Issue Nr 3/2004: *Notional defined contribution pensions: What they can do, and what they can't* by Nicholas Barr.

The paper assesses notional defined-contribution (NDC) pensions from the perspective of welfare economics in terms of three set of questions: is the particular feature an advantage; if so, is the advantage specific to NDC or could it be achieved by other arrangements; and is the advantage one of policy design or of political reality? The paper offers a number of conclusions: many of the claimed advantages are not the sole property of NDCs, but could be achieved by other designs; second, NDC is not a theoretically dominant policy, and hence cannot be asserted as innately superior to other approaches; third, the approach does not address the fundamental problem of pension finance - the fact that earliest pensionable age is not related to life expectancy

Issue Nr 4/2004: *A German perspective of the new Swedish public pension system* by Peggy Letzner and Ortrun Tippelmann.

Sweden recently reformed its public pension system by replacing the former defined-benefit system with a notional defined-contribution system (NDC). The new system has a strong focus on financial sustainability. It emphasizes the principle of equivalence, includes the increasing life expectancy of the Swedish population into the calculation of pensions and establishes a so-called automatic balancing mechanism. Hence political agreements concerning possible adjustment measures in the future will become unnecessary. However, all financial risks are approached at the expense of the level of pension benefits. The comparatively high pension level projected for future decades is above all due to the existence of large buffer funds. Taken together, whatever the systematic choices of each retirement system may be, there is no golden path out of the dependency from economic and demographic developments

Issue Nr 2/2005: *Balanced Notional Defined Contribution Schemes: A new "geist" in old bottles?* by Michael Cichon.

NDC schemes are not in automatic financial equilibrium without a balancing mechanism, since they can cope with increasing longevity but not shrinking workforces resulting from decreasing fertility. The need for additional mechanisms to keep the schemes in balance is resulting in the adoption of new regulatory mechanisms. This paper tries to trace the principal effects of such balancing mechanisms on a typical European country called Demoland. The analysis heavily draws on the Swedish method of balancing NDCs to analyse the principal effects of a balanced NDC approach in a stylized typical European demographic and economic context. The paper argues that the balanced NDC approach limits the policy space policy makers to find a fair sharing of the financial burden associated with demographic developments between generations. The limitation of the policy space leads to the fact that the financial consolidation of the NDC pension schemes will be done at a high cost to pensioners in a typical European context. It also symbolizes a fundamental shift in the way PAYG pension schemes are functioning, away from a solidarity-based way of coping with emerging new demographic, economic, social and resulting financial burdens to an individualistic approach with uncertain long-term consequences for the future standard of living of pensioners.

Issue Nr 3/2005: *Reflections on Notional Defined Contributions Public Pension Schemes* by Warren McGillivray.

In the mid-1990s, the Notional Defined Contribution (NDC) system, an innovative approach to public pensions, was adopted as the principal component of a fundamental reform of the social security pension system in Sweden. At almost the same time, privately managed individual accounts defined contribution (DC) schemes were being strenuously promoted. (World Bank: 1994). The NDC system seemed to embody some of the advantages claimed for funded DC schemes while avoiding the risks sceptics foresaw in the funded DC approach. The NDC system is seen by some as an appropriate basis for reform of public pension schemes (European Commission: 2003; Holzmann: 2004).

Issue Nr 3/2005: *Finnish Experience of Raising the Employment Rate of Older Workers* by Jukka Rantala

In Finland the development of the employment rate of older workers has in recent years been more positive than in many other European countries. This article discusses the measures taken in Finland to

address the effects of the ageing work force. These measures include major reforms of the pension system. For example, employees will have a 4,5% increase in their pension for every day they stay on at work after the age of 63 until they reach 68. The article also discusses the elements which induce people to work longer.

Issue Nr 2/2006: *Replacement rates in the new Swedish pension system.* by *KG Scherman*

In this article the pensions that the new Swedish public pension system provides are studied. Replacement rates, relative pension levels and pension ages needed to obtain an adequate pension are discussed. The article argues that neither the replacement rates nor relative pension levels reach the targets formulated back in 1994. Further, the expected development of the Swedish pension system according to official projections are compared with what could be expected using a formula for how a pure PAYG system functions. The conclusion is that NDC systems will face significant falls in pension levels as a consequence of deteriorating demographic conditions. This will occur either by openly reducing pensions by changed computation rules or by a more or less transparent balancing mechanism. The author invites the Social Insurance Office to address the issues raised in the article.

Issue Nr 3/2006: *How Large will the National Pension Be?* By *Ole Settergren*

This article summarizes results of different methods of projecting the average replacement level in Sweden's national pension system. The results of the estimates are compared with the pension levels indicated in the Annual Report of the Pension System. The conclusion is that the projected pension level is heavily dependent on the method of calculation used. It is also shown that the lower pensions expected in the new system are explainable largely by the increase in average life span forecast by Statistics Sweden, as well as by the fact that the tax reduction for the individual pension contribution has increased the income with which pensions are compared. The reduction in pension levels due to the increase in average life span could be avoided if the retirement age were raised by 3-4 weeks for each annual birth cohort.

Issue Nr 4/2006: *Pension reform in Norway and Sweden.* By *Martin Andresen*

In the 1990s, Sweden reformed the pension system¹, and payments from the new system started in 2003, while Norway is in the middle of a pension reform that will come into effect from year 2010. The Norwegian reform is similar to the Swedish in certain respects, both in process and outcome. On the other hand, there are also some striking differences between the two countries, although they traditionally have followed each other closely in the development of Social Insurance schemes. I will describe and discuss some important similarities and differences between the two countries, with the ongoing Norwegian process as my starting point.

Issue Nr 4/2006: *Replacement rates in the new Swedish pension system - a Danish perspective.* By *Per Bremer Rasmussen* and *Peter Skjødt*

The authors comment on the article in NFT 2/2006 on replacement rates in the Swedish pension system. The authors are not surprised by the financing problems arising in Sweden, and they claim that the organization of the Swedish pension system as a tax financed pay-as-you-go system makes it vulnerable to budgetary considerations, even though the system is a notional defined contribution scheme. In Denmark the responsibility for topping up social pensions lies with the private sector. This gives rise to different risk sharing features than in Sweden.

Issue Nr 1/2007: *Security for Social Security: Is Pre-Funding the Answer?* By *Robert L. Brown*

With the re-election of George Bush, the debate around privatization of Social Security in the United States has been rekindled. The Republicans favour separating a part of OASDI to be moved into Individual Retirement Accounts. Some have suggested more radical reforms such as moving OASDI entirely from a Defined Benefit (DB) scheme to a Defined Contribution (DC) plan based on the Chilean model. Canada has moved to a system of greater pre-funding for the Canada/Quebec Pension Plans (C/QPP) in order to cap contribution rates at 9.9 percent. These proposals have the goal of creating higher investment returns, to make social security benefits more affordable. The important public policy issues inherent in such proposals are numerous: is pre-funded social security demographically immune; does pre-funding social security increase gross national savings and worker productivity; are there better ways to create a healthy economy; is social security best offered as a DB or DC plan? This paper reviews these

important issues in the context of recent social security policy initiatives in Canada and the U.S. After extensive review, the paper concludes that greater pre-funding of social security will not, of and by itself, create a more secure system.

Issue Nr 1/2007: *Toward a Pan-European Pension Reform Approach: The promises and perspectives.* By Robert Holzmann

The need for a rapid and comprehensive reform of the pension systems in most old and new member countries of the European Union is increasingly acknowledged by pension scholars and politicians. While a few countries have recently undertaken major reforms to make their pension systems financially sustainable, in the majority of European countries the reform efforts are still insufficient. While national efforts can now draw support from intensified EU cooperation based on the Open Method for Coordination, this method takes the diversity of European pension design as a given, and much of the reform debate is still limited to fiscal issues at national levels. There is little discussion about a reform need beyond fiscal consideration. There is no discussion (anymore) about a reform move toward a more coordinated pension system within the European Union, and how such a system may look and come about. That is the topic of this policy note.

Other

Daykin, Chris; *The challenge of Aging: Pensions Reform, International Trends and Future Imperatives*, in Politea, A forum for Social and Economic Thinking , London 2006.

The beginning of the preface reads

Given the changing demographic patterns in so many countries around the world, with a falling ratio of working age people to the retired, and the average life expectancy continuing to increase rapidly, how can retirement be paid for in a way that is politically and economically possible and acceptable? How can pension schemes, both public and private, be made financially sustainable, whilst still providing adequate retirement income to participants?

This study considers a number of different pension systems, the challenges they face and the different approaches to reform.

The paper contain among other issues a comprehensive analyses of the NDC concept and especially the Swedish reform

Scherman, KG: *The AP-fund, "the Break" and your Pension*, Published in Stockholm 2004 by Jure Publisher. (Available only in Swedish)