The Swedish Model for Pension – New Wine in New Bottles

by Bo Könberg

Bo Könberg
bo.konberg@d.lst.se

The Swedish parliament´s decision in 1994 on the new pension reform was the first parliamentary decision on what is nowadays called a Non-Financial (or Notional) Defined Contribution (NDC) system. It has since then been at the centre of the international debate on pensions. It has been introduced in several other countries, among these Latvia, Italy and Poland. In this article comments are made on the long and valuable debate in NFT that started at the end of 2002 and which consists of some 20 articles. Among the objections commented are that the aims of NDC could have been achieved without changing to a DC system, that the Swedish pension system will give very low pensions in the future and that the creation of the Automatic Balancing Mechanism will place the whole burden on retired generations.*

In June 1994 the Swedish Parliament approved a proposal for a new system for pensions. It was the result of an agreement between five parties representing some 85 % of Parliament. The reform consisted of two parts. The major part was a Non-Financial (or Notional) Defined Contribution (NDC), the minor part was a Financial Defined Contribution (FDC) part.

This was the first time that a parliament decided on a pension system that included a NDC part. It seems that something similar was proposed in 1992 to the parliament of Uruguay, but the proposal was rejected by the Parliament.[1]

The Swedish political agreement to introduce NDC was reached in January 1994 while the main features had been presented by the parliamentary Pensions Working Group in a "sketch"[2] presented to the public in August 1992.

The implementation started already in 1995, the first year in which contributions were paid for the FDC scheme. These earned a bond rate of return until individual accounts had been

Bo Könberg is Governor of the County of Södermanland, Sweden. He was Minister for Health and Social Insurance 1991-94 and also Chairman of the Pensions Working Group that existed in the same years and that created the new Swedish pension system. He was a Member of the Implementation Group for the new system 1994-2005. He has been involved in the reforms of the pension systems in Latvia and Poland. He was Leader of the Liberal Party in Parliament 1998-2005. He has earlier written two articles in the NFT debate on the Swedish model.

* The articles can be found on www.forsakringsforeningen.se/nft (International and Swedish experts on Swedish Pension Reform and related matters).

created in 1999 and the first individual fund investment choices were made in 2000.

The implementation of the new system of the FDC and NDC parts continued up to year 2003. There is a transition process. Those who were 56 years of age at the time of the decision were partly influenced by the new rules. Those who were 50 years at the time would get half of their pension determined by the new rules and half by the old rules; and those who were 40 years and younger would receive their whole pension according to the new rules.

That means that – if people retire at 65 – those who retire next year will have half of their pensions calculated by the new rules and that from the year 2019 all new pensions granted will be calculated by the new DC rules.[3]

International interest

After the Swedish decision in June 1994 several parliaments have taken similar decisions on NDC. In 1995 both Latvia and Italy did it and Poland followed with legislation in 1998. Russia in 2002 introduced reforms that aim to emulate key features of the new Swedish system. The Kyrguz Republic has introduced a form of NDC for new entrants and Mongolia is reputed to have taken decisions on introduction of a NDC system.[4] Norway has decided to change its public system in the year 2010 from a DB system to a NDC system. Note also that recently, the United Kingdom has decided to introduce a FDC system similar to the Swedish PPM system.

Several authorities now propose that many countries ought to introduce NDC systems or similar systems. One of them is the World Bank's Director of Social Protection, Robert Holzmann. He has proposed that pension systems with NDC at its core ought to be established in the European Union[5] and also in Japan[6].

The name NDC was not in use in the year 1994. It came first some years later. We often described the plan *as following a Lifetime Income Principle* and it was (almost) unfunded.

The idea to apply the design principles from a DC plan to a pay-as-you-go pension plan was not completely new, but had by most pension experts not been thought possible. Pension systems can be Defined Benefit system or Defined Contribution. They can be unfunded (Pay-As-You-Go, PAYG) or funded. By combining this you can have four systems. But only three were really thought possible. The two main combinations were public unfunded DB-system and private funded DC-system. Funded DB-systems exist, of course, mainly as occupational pensions.

But the point is that unfunded DC-system did not exist in the real world and almost not in the pension debate. There were some exceptions to this. Note that the latter have come to light well after the Swedish decisions became known in 1992-94. Perhaps the earliest mentioned in the actual debate is Buchanan in 1968.[7] In the middle and the end of the eighties and also in the beginning of the nineties the idea was proposed by some Swedish economists.[8] It was also mentioned by Barr in the end of the eighties.[9]

It can also be argued that the basic idea of what is now named NDC was presented already in 1950 by a Swedish Royal Commision led by General Director Åkesson[10]. Some may object that the proposals were more like the French points system that were created in the end of the forties than real NDC system.

The Swedish Model is nowadays much in the centre of the international pension debate. It has even been called a Revolution.[11] In NFT a debate started in the end of the year 2002 with an article[12] that was very critical against the Swedish reform. Ole Settergren described the reform[13] and I replied to the criticism in the first article[14]. After that KG Scherman[15] has criticised the reform and I have replied also to that[16].

Since then NFT has been generous enough to publish – I think – 15 more articles on NDC. The latest two by Robert L. Brown[17] and Robert Holzmann in the beginning of 2007[18]. Now it is high time to comment on this long and valuable debate. I will try to do so in this article and I will try to concentrate on important points and mostly on aspects that I have not commented on in my two earlier articles. In this article my comments will almost only regard the NDC component although I consider the FDC component of the Swedish reform also to be very important.

I am specially happy that so many distinguished international specialists have taken this opportunity to comment on the Swedish model. In some cases I will also refer to what has been mentioned in the important book on NDC from the year 2006, which was edited by Holzmann and Palmer[19].

The most important critique

In my opinion the most important critique points are

- The same social and economic properties could have been achieved without the complete change of system, i.e. without inventing and introducing the NDC design,
- it will give very low pensions or an extreme retirement age in the future and
- it takes away all future power from the politicians and more specifically
- the introduction of The Automatic Balance Mechanism (ABM)[20] which is said to have transformed the NDC system and placed the burden of future negative adjustments on the retired generation.

Another way to do it?

It is here probably necessary to comment on what the difference is between a Defined Benefit (DB) system and a Defined Contribution (DC) system. Especially as all public mandatory pension systems up to 1994 were DB systems.

The DB-system can vary rather much in how extreme or modest they are. The most extreme – and probably non-existent – version is that the pension is calculated on the basis of the final salary and that it is enough with one year of participation to have a full pension. It would probably be very expensive and would of course need a tremendous redistribution from those who worked many years and with a low salary to those who worked few years – or only one year – with a high salary. So all known DB systems are less extreme.

One example was the old Swedish system which was decided in 1959 (ATP). The benefit calculation was made on the 15 best income years and it was enough with 30 years of contributions to get a full pension. Norway which made a similar reform some years later choose a little less generous rules to those worked few years and had a steep income profile – the 20 best years and enough with 40 years for a full pension. In many countries the rules were even more generous to those with few working years and a steep salary than the old Swedish rules.

The Swedish rules meant that it was enough to work part-time, say a fourth of the year, in 15 years (that is less than 4 full-time years) and then fulltime in another 15 years and then get a pension calculated on the 15 fulltime years. When the retirement age in the middle of the seventies was lowered from 67 years of age to 65 this meant that you could work less than 19 full-time years and then when you retired in the year 1995 get a so-called full-time pension for almost 17,5 years of retirement.

It does not need to be said that this was expensive, but it must be said that it meant a big redistribution from people with low incomes to people with high incomes. It was less of Robin Hood and more of the Sheriff of Nottingham. It also meant that the contribution paid to the system included a high tax wedge as many contributions paid did not increase the pension, for example for those years worked beyond the 30 years needed.

What is then a Defined Contribution system? That is a system where all contributions paid are used for calculating the yearly pension – at least for those who live till they retire.

Perhaps it seems that the two systems are very different. And mostly they are. But consider what happen if you increase the number of years needed for a "full pension" and the number of "best years" calculated. It is obvious that the Norwegian rules were, all other things equal, a little closer to a DC-system that the Swedish rules were.

And what happen if we increase the Norwegian rules from 20 to 40 "best years" and the full-benefit number of years from 40 to 45 years? Or from 20 to 50 "best years" and the number of years required for a full benefit from 40 to 50 years? Well, it will then have been changed – almost – from a DB-system to a DC-system.

The ancients discussed at what point a man with hair becomes bald. Is that when he has just 100 hairs left, 10 hairs left or no hair? At what point does a traditional DB system become a DC system?

At least when the whole *lifetime income* is counted it has the central feature of a DC-system albeit not all the features required for NDC (see Palmer 2006). And a system where the tax wedges has disappeared with the important exception that the system is mandatory.

The redistribution from those with many years at work to those with few years has then disappeared or – better – been changed and transparent and paid by general taxes. For example by introducing a *guarantee pension* and by giving *pension rights for care of small children*, financed with general taxes.

By this change we have created a system that both is more fair and more efficient. And it is also more transparent for media and, I would claim, for the general public. Often in politics there is a conflict between fairness and efficiency. If you increase one of them you *too* often have to diminish the other. To replace an existing DB system with a DC system with tax financed social rights is – in my opinion – a clear exception.

According to Michael Cichon[21, 22] this can be arranged in another "mathematical" way than introducing NDC. Disney has also made similar claims.[23] They are probably right, but what would be the point if it is the same? Just for the pleasure of not having to use brand DC? The "only" real difference would be less transparency and therefore less influence on positive behaviour like willingness to work and to work longer.

It is always better to call a cat a cat than call it a dog – even if you happen to like dogs more.

Lower pensions with NDC?

Several of the critics, among them KG Scherman and Michael Cichon, claim that the pensions in the Swedish pension will be very low.

I and the other reformers claimed in 1994 (and onwards) that the pensions as percentage of income would not decrease in the new Swedish system compared with the old ATP system for those who worked a little longer than 40 years *if* the wage increase was around 2 % *and* the life expectancy was the same. Of course we thought it very likely that the life expectancy happily enough would continue to increase in the future.

And our message was very clear: If you live longer than your father and want the same percentage in pension relative to your wage as he had, you have to work longer and retire later than he did. It would not be necessary to work as many months later as you live longer. It would be enough with some 2/3 of the increase.

So the message to our generation and to our children is: You will probably earn almost double as much as your father did, you will live at least two years longer after 65 than he did and it is only necessary for you to work 1.5 years later than he did in order to get the same replacement rate as he did. In purchasing power your pension will almost be double that of his. Is this a bad offer?

No, of course not, but will it become true? Not according to KG Scherman and Michael Cichon.

The 2007 Annual Report

Of course, none of us know the future. What we can do in this discussion is to look to what has happened up to now and what the experts think about the future. Ole Settergren has in his reply to KG Scherman in detail discussed these questions[24]. So let me here only summarize the result of the last annual report for the Swedish pension system, that was published last month[25] That report is two years more recent that the one used by Ole Settergren.

Has the average Swedish pension been lowered since the decision? No, it has not. It has been raised. The change from the old price indexation to wage indexation minus 1.6 % (new pensioners have received an imputed wage increase of 1.6 % in advance) has meant that the average earnings-related pension in payment since 2002 has increased with 5 % in real value. In the old ATP system pensions never increased in real terms. In fact, many countries that previously have had some form of wage indexation have now moved solely to price indexation. And they have done this in order to save money for their pension systems.

In the Base Scenario in the Annual Report there are *no signs of lowered pension as long as you work later.* The so-called Automatic Balancing Mechanism (ABM) ("brake") is not applied during the 75 year period calculated, up to the year 2082. The buffer funds which now have a ratio of almost five years of annual pension payments will in this scenario not fall below the level of three years (the lowest ratio will be 3.4 years in the middle of the thirties).

This can be compared with what was discussed in the Pensions Working Group about trying to avoid the buffer-fund strength to fall under 1 year and in the proposal presented to Parliament in 1994, with an absolute floor of 0.5 years. When the ABM was introduced it was considered superfluous to set a floor.

In the base-line scenario in the Annual Report there is even a financial possibility to use some of the buffer funds to increase the real value of pensions and that at the time when the pressure on the buffer fund is great, that is during the many years when the baby-boomers are retired.

Can "excess" funds be identified and used to increase pensions in Swedish NDC? In 2004 a government committee proposed rules for when the buffer funds could be used to increase the pensions. The proposal was that it should be done when the so-called balance ratio (a form of solvency ratio for a pay-as-you plan*)* was higher than 1,1, that is when real and "notional" assets exceed pension liabilities by 10 %. In the current Base Scenario that will happen in the year 2037. If this proposed rule is not implemented, the ratio can exceed 1.2 within half a century from now, given present growth and demographic assumptions.

The development of the FDC part has also been positive. It started in 1995 and in the first years the contributions were placed at the National Debt Office at a rather low rate of interest compared with the rate of return on equities. In spite of that and the turbulent years in the stock markets in the years 2001–2003 and last autumn, the average yearly yield has been higher than the 3.25 % in real terms that is the assumption in the yearly information to all those who are covered by the system.

The Annual Report 2007 has several positive messages, but – again – none of us know the future. The good figures are the result of a strong economic development in Sweden since the economic crisis in the beginning of the nineties, a bigger work-force, a good birth-rate (last year more than 1.85 per woman) and a good projected birth-rate together with a high net immigration rate, both experienced and projected.

The critics who claim that the replacement rate will be lowered significantly may be proven right, but the current figures are not on their side. And the statements the reformers made – that the replacement rates could be kept if the resources yearly increased by at least 2 % in real value, worked more than 40 years and retired later as life expectancy increased – do seem to turn out correct.

In fact the NDC reserves are higher now than we thought and – as mentioned – in the future predicted to be much higher than we then thought possible. The year when current contributions will be lower than current pension payments has also been somewhat postponed.

Future Politicians without Power?

Many critics, among them KG Scherman, claim that the NDC system, especially after the introduction of ABM, has deprived the politicians of their power in the field of pensions and thereby stopped them from letting the burden of future strains be shared between the active population and the pensioners. From now on the whole burden will be carried by the retired generation.

In a formal sense, those critics are of course wrong. Any day, including tomorrow, the Swedish parliament can change the new rules. The NDC system can be changed back to a DB system. The FDC system can be closed to future contributions. The contribution rate can be raised and that can be done without increasing the pension rights. Parliament can raise taxes and redistribute the proceeds to pensioners. Almost anything can be done. The sky is the limit!

But that was certainly not the intention of the reformers. Our intention was to establish more fair and efficient rules than before and making them as economically *and* politically stable as possible.

Rules that are peripheral like the construction of the system for pension rights for caring of children, the level of the guarantee pension, the way in which spouses are allowed to share pension rights, how many funds to choose between in the FDC system and rules like that can of course be changed without disturbing fundamental principles. Rules that are central to the system ought to be kept.

Of course enormous things can happen in our world. The Large Comet can appear next year. The fertility rate can drop to 1.0 during a long period instead of the necessary 2.1 to maintain the necessary population in the absence of offsetting net immigration and the politicians can show themselves incapable of such changes in family policy that will change the trend. Medical scientists can invent something that lets us live much longer but without a compensating increase in working capacity. And so on.

But is the fact that the future is unknown reason enough to leave wide-open the decisions on pension policy given the opposite interest to have so stable rules as possible?

Is 25 % too Little to Pay for Pensions?

Most of the critics seem to leave open the possibility to increase the contribution rate and preferably in such a way that the increase not at all or only partially will increase the pension rights.

If we look at the current contribution rates in Sweden they are rather high. The public earnings-related system claim 18.5 % of the wage. Some 90 % of wage earners have also occupational pensions, which cost some 4.5 %. So today most Swedes pay some 23 % of gross earnings for their future pension.

The public system is also financed by general taxes. The cost for the guarantee pension and for the rules regulating pension rights for caring of small children, military service and university studies is more than 2 % of the total wage sum. So before we take into account the cost for occupational pensions for higher wage-earners and the private pension insurance, both of which are common in Sweden, we find that some 25 % on top of the wages are paid for the future pensions. Should not that be enough?

The answer to that question differs of course between individuals. Some want a replacement rate that is higher than the 23 % plus pension rights for years caring for small children etc. will produce. They are – hopefully – themselves willing to pay more in contributions during their active life in order to get a higher pension when the retire. That does not necessarily mean that the *mandatory* contribution rate ought to be raised for everyone.

But it can be an argument for having a possibility, for those who want to buy private pension insurance, to deduct the contributions from tax now and be taxed when the pension payments are received.

What about the Balancing Mechanism?

The one major novelty in the Swedish model that was not introduced already in the 1992 sketch was the Automatic Balancing Mechanism. The problem that the mechanism manages was explicitly discussed in the Government Bill in 1994. The balance mechanism was described in the Government Bill in 1998 when the indexation was legislated, however, it was considered to need further investigation and its legislation was delayed until 2001.

The design was proposed in 1997 and it was subsequently developed by Ole Settergren together with Hans Olsson and Boguslaw Mikula.

It seems that the mechanism, sometimes called the brake, is an invention. It intends to give early notice that the financial stability of the system is threatened and then automatically start a diminished indexation both of pensions paid and of notional pension capital. By de-indexing early and re-indexing early it attempts to minimize the financially necessary corrections of current and future payments.

The reason that the mechanism was invented was due to the desire of the reformers to give the system better social properties than a system with a ”perfect” annual balance between contributions and rights. One cause for such imbalances was the transition rules which was decided on instead of introducing the NDC system immediately.

Secondly, the wage index was based on the changes in the average wage and not in the total wage sum. That is good since it ties the benefit to the development of the per capita income level, but potentially financially dangerous if the size of the work-force declines. It could be a gain for the system as such, but it was then seen as more probable that it was a loss, that is that *the average wage index* would be more expensive than the contributions could finance.

Thirdly, the link to life expectancy increases was only made until retirement with the value becoming fixed at age 65. That covered perhaps two thirds of the cost created by the increased life expectancy over the entire life. The reasons for this decision were two.

One was that it that it was thought better not to rely on projections, which of course could be questioned. The other was that the possibility for retired persons and especially older such to combat decreasing pensions by returning to work is very large. Working people on the other hand would normally have the possibility to work some months or a year later when they every year hear that the life expectancy increases and that the replacement ratio thereby is lowered.

As a part of the reform, the right to continue working in year 2003 was raised from 65 years to 67 years. That increase of the freedom of the wage-earners was later condemned by the ILO! Not easy to be a social reformer in such a world.

Fourthly, the return of the buffer funds could be both higher and lower than the income growth, and thus be a source of financial instability. In principle the return is expected to be higher than the income growth.

The first three exceptions from *strict* rules were all thought to be more expensive for the system than the alternatives. If the exceptions had not been made, the need for a mechanism to balance the system would have been much smaller. And the ABM would maybe not have invented. Which would have been a pity – at least for those of us who like new ideas.

Many of the critics of NDC are especially negative to the mechanism, both because it is automatic and because they think it will be used very often and step by step will press the outgoing pensions to lower and lower levels.

An alternative to the ABM would have been to give the government the duty to go parliament with proposals to increase the contributions or to lower the payments. In Sweden and probably many other countries a lesson has been that such a method will increase the risk that the changes when they must happen will be larger than the probably small steps that the ABM will give. In the autumn of 1992 the government and opposition agreed on lowering the pensions by 2 % in one swoop.

A parallel is the automatic effect on pensions of the changes in life expectancy. In the Italian version of NDC this effect is also a part of the system, but there the effect was planned to be used ever ten years. The first decision should have been taken a couple of years ago, but was postponed and no decision has yet been taken.

As I mentioned earlier the ABM has not yet been used. A couple of times it has been close, mainly due to small technical design issues. It has to do with *c*hanges that ought to have been taken into account when the balance ratio was calculated, which they were not. The recently constituted Pension Group with representatives for the five parties that support the reform will discuss how to rectify this problem in the future.

If the ABM at some time will decrease the real value of benefits the pensioners with the lowest pensions will be compensated by higher guaranteed pension. Those with benefits in the immediate segment above that will get 48 % of the reduction replaced by the guaranteed pension.

In the current Base Scenario the ABM will, as mentioned, not be used under the period of 75 years that is now covered in the scenario. In the Pessimistic Scenario it will be used very often. Taken into account that reality probably will vary more year by year than predictions usually are allowed to be, it seems probable that the ABM will be used sometimes. But at present it seems to be a rather small risk that it will continuously lower future pensions.

Some other criticism

Among the other articles I would like to comment on those of Nicholas Barr[26] and Robert L Brown[27, 28].

Barr claims that NDC is *a* design, not *the* design. Maybe so, but for a reformer it is more important if it is better than the alternatives and if it is rather easy to complete the original model or not. In my opinion NDC is better than the three alternatives, at least if you include in the assessment the enormous difficulty to go from an un-funded system to a wholly-funded system. Has Barr another opinion about this than I have?

As to the question if you can better the Swedish model – without changing the basic components that make it a NDC system – let us take one of his three conclusions in the article. That "the NDC pensions do not address the central funding issue." That sounds like a rather severe point of criticism for a pension system.

What he claims is that the system (and all other pension schemes) currently face the root problem of retirement ages which remain largely fixed as life expectancy rises. He admits that the NDC system faces the problem in a formal sense and that by reducing the accrual rate. To this I may add that the old Swedish system and many current systems do not even do that

But what – he wonders – if people in spite of that are stubborn enough to retire as early as is allowed? To that his answer is that they will get very low pensions. And in this he is of course right.

The question about how to handle the economic consequences of the great joy of rising life expectancy was by the Swedish reformers considered to be one of the most important they felt obliged to handle. The changes we proposed and got accepted were

- introduction of the strict connection between contributions and benefits,
- increasing the earliest age of retirement from 60 to 61 years,
- increasing the earliest age for (reduced) guarantee pension from 60 to 65 years,
- abolition of the ceiling of 70 years for increasing the yearly pension by working longer,
- yearly information to all wage-earners about the anticipated level of the annual pensions at different retirement ages (63, 65 and 67 years) and, as mentioned,
- raising the age to continue employment with the present employer from 65 to 67 years of age.

Of course – someone may say – the reformers ought to have done more. They might for example have indexed some of these age rules to further increases in life expectancy.

The de facto retirement age in Sweden had – like in many countries – dropped during many years before the middle of the nineties. Since then and up to a couple of years ago it has increased with about one year. That valuable change has certainly had many different causes, but it seems that the changes in the public pension system have contributed. Personally I feel confident that pension rules are important if you want to raise the factual retirement age.

Personally I also agree with Barr that the initial pension age ought to be increased (preferably indexed, say with a quarter at each time) with rising life expectancy. And I also very much agree with his wish for a more flexible labour market. The first is easy done within the pension system without changing its character of an NDC system. The second cannot be arranged by change in pension systems, but wise changes in them can stimulate it.

Brown has in his two articles not so much commented on the unfunded DC system as such, but more argued against funded schemes. In his recent article[28] he in his conclusions proposes seven, as he says, important principles for a social security pension system. He says that they often are in conflict among themselves.

Given the seven principles he has chosen I am not so pessimistic as he is. Almost all of them could be present in a good pension system and most of them are in the new

Swedish system. The main exception is the perennial question of large effective marginal rates, which also exist in the new Swedish system. Here the iron-hard laws of mathematics rule.

I am little surprised that Brown has not noticed that most of his seven important principles has been taken care of in the new Swedish system. Maybe the explanation is that – to judge by his bibliography – he has not used the important book on NDC from 2006 and that of the several articles in NFT he has chosen only those three Swedish articles that are critical of the new system and none of the four other.

Conclusions

The NDC system, which can be described as an un-funded Lifetime Income Principle without the right to a lumps sum when you retire and with a balancing mechanism is an important new system to treat perennial pension questions. If it is arranged together with a good guarantee level it can handle the problem of old age poverty and at the same time be more fair and having more positive incentives than a traditional DB system.

Those effects can probably be arranged in a more complex and less transparent way than by NDC and the adherents of that will like to call even that system for a DB system. But it will be misleading as a system where all contributions are counted is a DC system. Why do things in a more complicated and less transparent way than possible?

The Swedish NDC model is not as has been claimed Old Wine in New Bottles but New Wine in New Bottles.

For those countries and experts who consider a DC system better than a traditional DB system, the NDC model has the important advantage that it can be created without having to fund a new system parallel with paying pensions for the pension rights in the old system. It is – as everyone will find – not easy to find a generation that is willing to both pay the pensions for their parents and for themselves.

*

The author is grateful for valuable comments on the text and for many years of co-operation and many years of discussions with *Edward Palmer* and *Ole Settergren.* Remaining errors in the text are of course the author's responsibility.

Notes

1 Brooks and Weaver in Holzmann and Palmer (eds) 2006, ch 14.

2 Pensionsarbetsgruppen (Pension Working Group) (1992).

3 For a description of the new Swedish system, see Palmer 2000, Settergren 2001, Palmer 2002, Könberg, Palmer & Sundén 2006 in Holzmann and Palmer (eds) 2006, for a shorter version, see pages 14-19 of Annual Report of the Swedish Pension System 2006, available at www.fk.se).

4 Williamson (2004).

5 Holzmann and Palmer, ch 11.

6 Holzmann in NFT 1/2007.

7 Buchanan (1968).

8 Most used by the Working Group were Bröms (the autumn of 1990) and Ackerby (the spring of 1992).

9 Barr (1987).

10 Åkesson (1950).

11 Holzmann and Palmer (eds) (2007), the German version.

12 Hagberg and Wohlner in NFT 4/2002.

13 Settergren in NFT 2/2003.

14 Könberg in NFT 2/2003.

15 Scherman in NFT 4/2003.

16 Könberg NFT 1/2004.

17 Brown in NFT 1/2007.

18 Holzmann in NFT 1/2007.

19 Holzmann and Palmer (eds) (2006).

20 For a description of ABM, see Settergren (2002) and Settergren and Mikula (2005).

[21] Cichon in ISSA review 4/1999.

[22] Cichon in NFT 2/2005.

[23] Disney (1999).

[24] Settergren in NFT 3/2006.

[25] Orange Report, Annual Report for 2007, (at present only in Swedish, but soon also in English).

[26] Settergren in NFT 3/2006.

[27] Barr in NFT 3/2004.

[28] Brown in NFT 1/2007.

[29] Brown in ISSA review 1/2008.

References

Ackerby,S.: Pensionsfrågan (only in Swedish, "The Pension Question", appendix 12 to the Longterm Investigation), Stockholm, 1992.

Barr, Nicholas (1987): The Economics of the Welfare State, London, CUP.

Brooks and Weaver in Holzmann and Palmer (eds), 2006, ch 14.

Brown, Robert L. Brown (2007): Security for Social Security: Is Pre-Funding the Answer?, NFT 1/2007.

Brown, Robert L. Brown (2008): Designing a social security pension system, ISSA review 1/2008.

Bröms, J.: Ur askan av ATP. (only in Swedish, "Out of the ashes of ATP"), Stockholm, 1990.

Buchanan. J.: Social Insurance in a Growing Economy. National Tax Journal December 21, 1968.

Cichon, Michael (1999): Notional defined-contribution schemes: Old wine in new bottles? In ISSA review 4/1999.

Cichon, Michael (2005): Balanced Notional Defined Contribution Schemes: A new "geist" in old bottles?, NFT 2/2005.

Disney, R.: Notional Accounts as a Pension Reform Strategy, Social Protection Discussion Paper No. 9928, Washington, World Banl.

Hagberg, J. and Wohlner, E.: The Market for Social Insecurity, NFT 4/2002.

Holzmann, R and Palmer E. (eds (2006): Pension Reform, The World Bank.

Holzmann, R (2007): Toward a Pan-European Pension Reform Approach, NFT 1/2007.

Könberg, B. (2003): Pension Reform Based on Sound Principles, NFT 2/2003 (originally in Swedish, now in English on the web site of NFT).

Könberg, B. (2004): The New Swedish Pension System – a Fair and Sustainable Model, NFT 1/2004.

Könberg, B, Palmer, E and Sundén A.: The NDC Reform in Sweden, ch 17 in Holzmann and Palmer (eds) (2006).

Orange Report, Annual Report for 2006 (available in English at www.fk.se)

Orange Report, Annual Report for 2007 (at present only in Swedish, soon also in English), Försäkringskassan, Stockholm.

Palmer, E. (2002): The Swedish Pension Reform Model, in Pension Reform Primer, World Bank, Washington, DC.

Palmer, E. (2002): Swedish Pension Reform, in Social Security Pension Reform in Europe, eds. Feldstein and Siebert, University of Chicago Press, Chicago.

Pensionsarbetsgruppen (Pension Working Group): Ett reformerat pensionssystem (only in Swedish, "A Reformed Pensionsystem"), Stockholm, 1992.

Scherman, KG. (2003): The Swedish Pension Reform: a Good Model for Other Countries?, in NFT 4/2003. (See also Scherman in NFT 2/2004 and 2/2006.)

Settergren, O. (2001): The Automatic Balance Mechanism of the Swedish Pension System, in Wirtschaftspolitische Blätter 4/2001.

Settergren, O (2003): Financial and Inter-generational balance?, NFT 2/2003.

Settergren, O (2006): How Large will the National Pension Be?, NFT 3/2006.

Settergren, O. and Mikula, B.D. (2005): The rate of Return of Pay-as-You-Go pension systems" in Journal of Pension and Finance Economics, July.

Williamson, J.B.: Assessing the pension reform potential of a notional defined contribution pillar in ISSA Review 1/2004.

Åkesson, O.A (chairman): Allmän pensions-försäkring (only in Swedish), SOU 1950:33.