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# **A General Comment on the Old Age Pension Problem: A Funded System for Those Who Caused the Crisis**

**Hans-Werner Sinn**

## **1. General Remarks**

This is *prima facie* a comment on the papers by Börsch-Supan, Persson, and Gramlich, but implicitly it is also a comment on other papers of this conference. In most Western countries the general problems of the old-age pension systems are similar, and transition to a funded system is often advocated as a means of removing the distortions thought to be brought about by the pay-as-you-go system. In this comment, I will argue that the nature of the distortions is different from what is commonly thought, and that the proper policy solution to the old-age pension crisis lies in a partial transition to a funded system for those families which have caused this crisis.

Börsch-Supan, Gramlich, and Persson have given useful accounts of the problems facing their national pension schemes, and all three authors have pointed to the demographic problem of an increasing dependency ratio. In qualitative terms, the problems are the same everywhere, but quantitatively they are much more severe in Germany than in Sweden or the United States. Germany was the first country to introduce a state pension system, and it now has the lowest birth rate in the world after Italy. Only 0.6 girls per woman are born. Its dependency ratio is climbing faster than that of nearly all other countries, and will approximate 50 percent in 2030. For Germany, a catastrophe is in sight, and it is small wonder that Axel Börsch-Supan comes up with the most radical reform proposals of the three authors. While Ed Gramlich recommends that the United States use 1.6 percent of the pension contributions for a funded system and Mats Persson advocates a rate of 2 percent for Sweden, Axel Börsch-Supan suggests freezing the absolute contributions to the pay-as-you-go (PAYG) system immediately or, alternatively, phasing them out completely from 2005 through 2045. I find this proposal too radical, but I sympathize with a variant of it.

Given that the situation is less severe in Sweden and the United States, I do understand that Ed Gramlich and Mats Persson favor repairing the existing system rather than a full transition to a funded system. Ed Gramlich suggests cutting the benefit level and increasing the retirement age. Mats Persson advocates the introduction of registered individual accounts within the PAYG system.

The latter is an important proposal, which avoids much of the labor-leisure distortion that has been discussed by so many authors at this conference. With registered accounts and individual proportionality between contributions and pensions, there will be a labor-leisure distortion only to the extent that the present value of the pensions falls short of the present value of contributions, which in turn depends on the difference between the discount rate and the growth rate of the contribution value. Interestingly enough, the proposal coincides more or less with the system which has existed in Germany since 1957. I believe that the German system could also serve as a useful guideline for the United States, if one does not want to go the full way towards a funded system.

## 2. No Way to Escape the Labor-Leisure Distortion

Indeed, apart from the fertility considerations that will follow below, registered accounts make the PAYG system Pareto-optimal, because they reduce the labor-leisure distortion to an unavoidable minimum, given that current and future working generations have to pay for the net benefits which earlier generations obtained from the system. I advise the foreign participants of this conference to take notice of the illuminating controversy between Breyer (1989, 1990) and Homburg (1988, 1990) which has recently been resolved by an important article by Fenge (1995) in *Finanzarchiv*. Fenge proved very elegantly that no Pareto-improving transition from a PAYG system to a funded system is possible if, as in Germany, individual benefits are proportional to individual contributions. The essence of the proof is that that part of the contributions which is lost because it pays for the net benefits received by previous generations, and which creates a labor supply distortion, will have to be maintained after the transition to a funded system in order to pay for the elderly. Thus a funded system will not be able to avoid the labor-leisure distortion of the PAYG system. It can be used to change the distribution of resources over the generations but will not be able to improve any generation's well-being without making another generation worse off.

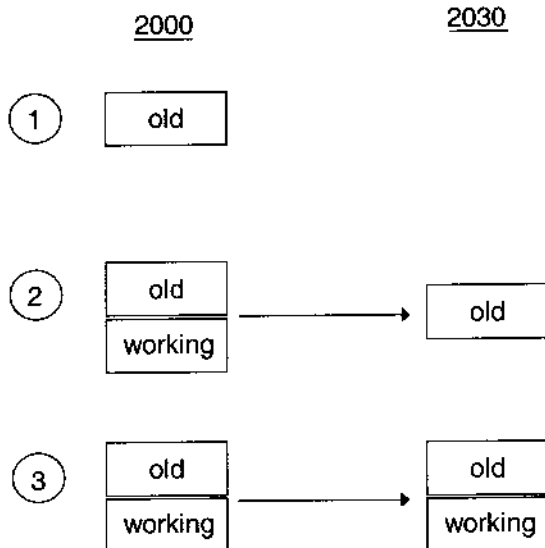
I guess that some of the papers of this conference will have to be rewritten if their authors take proper notice of Fenge's pathbreaking proof. This remark applies in particular to the papers by Kotlikoff et al., Feldstein, Siebert, and Börsch-Supan. All these authors claim that the transition to a funded system will generate welfare gains in the sense of Kaldor-type Pareto improvements, but none of these gains are really dependent on the transition to a funded system. It is true that the capital collected in a funded system could be invested tax-free in the domestic or international capital market (Feldstein and Börsch-Supan), but

the resulting welfare gain would also be available if the capital income tax system were overhauled, say by a transition to a cash-flow tax system. It is true that the distortion in the labor-leisure choice that remains even in the German system can be removed by financing the current old generation with a consumption tax (Kotlikoff), but this effect could also have been achieved by coupling a consumption tax with a wage subsidy. If we assume that the transition to a funded system is not accompanied by the invention of better tax systems, but that the set of feasible and Pareto-improving tax reforms has already been exhausted, there is no Pareto improvement from the introduction of a funded system.

### 3. A Three-Dynasty Model

Fenge's article convinced me that, in a PAYG system of the German type, the transition to a funded system is an issue of justice and fairness rather than one of efficiency and Paretian welfare considerations. Let me therefore have a look at the distributional consequences of alternative reform proposals. I prefer to see the distributional problem under the aspect of family dynasties rather than generations. As illustrated in Figure 1, we should distinguish three types of dynasty.

Figure 1— A Three-Dynasty Model for the Years 2000 and 2030



Dynasty 1 is currently dying out. It is characterized by old people who are currently pensioners and have no children.

Dynasty 2 lives a little longer. Its last generation will be retirees around the year 2030, when the financial difficulties of the PAYG system are greatest.

Dynasty 3 lives permanently. It has pensioners now and around 2030, but it always has people of working age.

If we leave the pension formula intact and solve the financial problems by increasing the contribution rate, only dynasty 3 will be hurt. Its working generation in 2030 will have to bear the full burden of the financial mismatch caused by population decline.

If, by way of contrast, we leave the contribution rate constant and reduce the replacement rate instead, dynasties 2 and 3 will be hurt, since their retirees will receive less than the pension formula promised.

In Germany, mixtures of these two policy solutions are currently being discussed. To me, they seem implausible because dynasty 1 never bears any of the financial burden. Indeed, they even seem unfair in the light of the fact that dynasties 2 and 3 would have to bear the burden of adjustment, while only dynasties 1 and 2 caused the problem.

They caused the problem by not having children. In order for the PAYG system to function, each working generation has to do two duties, not just one. It has to pay for the old *and* it has to pay for its children. Carrying out one of these duties is not enough for the survival of the system. Dynasties 1 and 2 have not raised children. They have not invested in human capital and have thus caused the old-age pension problem. It would be only just if they were made to bear the burden of adjustment, and they have the ability to pay given that they did not have to pay for their children. Since they did not invest in human capital, they should now be asked to invest in material capital. They are the natural candidates to bear the extra transitional burden of transition towards a funded system.

An elegant way to achieve this goal would be to make the old-age pensions proportional to the number of children—a proposal which a number of authors including Dinkel (1981), Albers (1990), Sinn (1990), Lüdeke (1995), Lüdeke and Werding (1996), or Werding (1998) have discussed. A reform along these lines would leave dynasty 3 unaffected, but impose the burden of adjustment exclusively on dynasties 1 and 2. Dynasty 3 can maintain the PAYG system, because it invests enough in human capital. Dynasties 1 and 2 will have to invest in material capital instead.

#### 4. The Fertility Problem

There is one important counterargument to such a solution, and this is the true efficiency problem connected with the PAYG system: the PAYG system is an insurance against being unable to have children. Children are socialized among all three dynasties. Those among the old who had no children are allowed to draw on the working capacity of other people's children to have their pensions financed. To the extent that the state of being without children is bad luck rather than voluntary choice, the PAYG system can be defended as a welfare-increasing insurance device. Seen from this perspective, it would not be a good idea to introduce a child component into the pension formula.

However, like any insurance, the insurance against not having children has a *moral hazard effect*. It reduces the incentive to raise children and to invest in their human capital. Given that one can rely on other people's children, life is more pleasant in a "dink" family than in a traditional family with one wage earner and many kids that need to be nourished.

I mentioned initially that Germany invented the PAYG system a hundred years ago and now has the lowest birth rate in the world after Italy. Small wonder that this is so. Over the generations, Germans have learned that life during old age can be pleasant and have a sound economic base even without their having had any children, unlike in the many centuries before, where childless people had to starve when they became old. Gradually, German fertility choices have changed under the influence of the PAYG system, and now we have the problems which many of the authors of this conference have described so vividly. The crisis of the PAYG system is the implication of a moral hazard effect which, unlike the distortion in the labor-leisure choice, is the true efficiency problem connected with this type of state insurance.

#### 5. The Fiscal Externality of a Child

In a PAYG system children create a huge positive externality for the rest of society. Suppose a family gives birth to an additional child. This child grows up, works, has children, pays pension contributions and, when old, receives pensions from his or her own children. When the fertility of this child equals the average fertility of the other participants of the system, the marginal positive externality which the child creates is equal to his or her gross contributions to the system. (It has little to do with the difference between the growth rate and the rate of interest.) Suppose the annual income is 50,000 DM, the contribution rate is 20 percent, and the child works for 40 years. Then the total sum of contributions is 400,000 DM or, after discounting with the difference between the discount and

growth rates, about 300,000 DM. Imagine, how many children would be born if this sum were paid out to the family which decides to give birth to a child!

## 6. The Optimal Pension System

The insurance literature has told us how an optimal insurance contract should be designed when there is moral hazard: it should have a deductible element so that less than the full risk is covered. Applied to the PAYG system this wisdom suggests that the proper reaction to the current crisis would be the *partial* introduction of a child component into the pension formula. Some, but not all, of the pensions should be made proportional to the number of children raised. All people should be covered to some extent by the PAYG system, but the smaller the number of children, the smaller the pension should be and the larger the required contribution to a funded system.

I know that changing fertility now will be too late to solve the financial crisis around the year 2030. However, the distortion in the fertility decision is always present, and it always creates welfare losses. Moreover, even without a fertility reaction, justice and the ability to pay consideration require imposing the burden of the crisis predominantly on those who have caused it. Thus, there is every reason to introduce the child-based benefit system now and to supplement it with a funded system for those who do not raise children.

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