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The German Pension System

Status Quo and Reform Options

Bert Rürup

5.1 Introduction

The German pension system, more so than any other in the world, is connected with the name *Bismarck*. Although it has changed a great deal since its establishment more than 100 years ago, some of its elements still resemble the 1889 version. The changes within the German pension system, which was originally organized as an investment-based fully funded system, were mostly results of political developments. The most drastic changes occurred after World War II: Because most of the capital stock in Germany was destroyed in the war, a way to provide income to the elderly was needed, and the only solution was to establish a pay-as-you-go (PAYGO) pension system. Between 1945 and 1957, the German pension system was still organized as an investment-based fully funded system, which could not be sustained because of a lack of physical assets in the German economy. In 1957 the fully funded system was replaced by an *Abschnittsdeckungsverfahren*, which is a special type of a PAYGO system¹; in 1969, the entire system in West Germany was replaced by a completely PAYGO-financed system.² In the East, the flat-rate pension system installed in 1949 remained in place.

Since 1957, when the calculation of benefits was linked to gross wages, the system basically has worked well. No serious problems occurred until the end of the 1980s. Thus the pension reform of 1992 was the first major

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1. The *Abschnittsdeckungsverfahren* is a PAYGO financed pension that is based on a constant contribution rate within a certain time period, which is called *Abschnitt*.

2. The difference between the pre-1969 and the post-1969 PAYGO financed systems is the yearly adjustment of the contribution rate depending on the level of expenditure. Between 1957 and 1969, the contribution rate was constant for any fixed time period beyond one year.

intervention into the pension system since 1957. It was passed by all political parties in the German parliament in 1989 and took effect in 1992. In between its passage and its enactment, however, a drastic political change occurred in Germany in the form of reunification. When the West German pension system was extended to East Germany, many problems occurred. In addition to demographic changes, these problems made further reform necessary. In 1997, the Minister of Social Affairs, Norbert Blüm of the Christian Democratic Party (CDU), designed the pension reform for 1999. After the 1998 election, however, the main governing party changed from the CDU to the Social Democratic Party; as a result, the main parts of the 1999 pension reform were abolished. However, the debate about the final reform of the system is not yet finished. So far there have been many proposals and discussions by all political parties in the parliament, the trade unions, and the employer associations.

In this paper, I focus on the changes within the German pension system. Section 5.2 briefly describes the institutional settings of the German pension system; section 5.3 describes the changes that occurred with the pension reform of 1992. Section 5.4 examines the most important elements of the pension reform of 1999. In section 5.5, I investigate the latest reform proposals by the German government, and in section 5.6, I summarize the existing situation of the German pension system.

5.2 The Institutional Settings of the German Pension System

The German pension system as it is constituted today is based to a great extent on the ideas of Bismarck. More precisely, the German pension system includes the former West German system, which was adopted by East Germany after reunification. Before that time, there was a flat-rate PAYGO system in East Germany.

The German pension system is a completely PAYGO, financed, defined-benefit system. Because it is mandatory for every employer, and with some exceptions for the self-employed as well, it is almost universal. The German system is financed mainly with contribution payments, which are shared equally by employers and employees and currently amount to 19.3 percent of the employees' gross wage up to a limit of approximately double the average income. Unlike a tax-based, flat-rate system, which insures that individuals will not fall below the poverty line when they are old, the German pension system aims at providing individuals a secure living standard.

Discussing the German system as one discrete pension system would be inaccurate, however. The German system is organized into several different units, the statutory pension system being the largest. Other units, ranked by size as indicated by the total amount of benefit payments and the share of participation, are shown in table 5.1.

Table 5.1 The Share of Old Age Security Systems in Programs for the Elderly (measured according to volume of benefits)

Old Age Security System	Pensions 1998 (DM billions)	Share (%)
Statutory pension insurance	353.0	86.8
Civil servant provision	34.5 ^a	8.5
Additional provision for public servants	11.0	2.7
Farmers' old age insurance	5.2	1.3
Occupational provisions	3.0	0.7
Total	406.7	100.0

Source: Schmähl (1998).

^aEstimation from German Federal Parliament (Deutscher Bundestag 1996).

The most important old age security system in Germany is the statutory pension system, which has the largest share of participants and the highest benefit expenditure. The old age security system for civil servants is somewhat different: It also provides a secure living standard by paying a certain fraction of preretirement income, but unlike the regular pension system, its pensions are financed by the government budget and not by individual contribution payments.

Compulsory insurance covers approximately 28 million people at present. Of these, about 27 million workers are subject to compulsory insurance, and 160,000 are self-employed and have mandatory insurance. Payments from the statutory pension insurance system and the Social Miners' and Mine Employees' Insurance can be divided into pension payments (inclusive of payments for health insurance for pensioners of about 350 billion deutsche marks in 1998) and rehabilitation payments (approximately 7.6 billion deutsche marks in 1998).

The legislation differentiates among old age, disability, and surviving dependents' pensions. *Old age pensions* can be described as follows:

1. *Normal old age pension.* Entitlement to this pension is automatic at reaching the normal retirement age of sixty-five and fulfilling the general qualifying period (the minimum period subject to compulsory insurance) of five years.

2. *Old age pension for the long-term insured.* Eligibility before reaching age sixty-five occurs if the insured have reached the age of sixty-two and have fulfilled the qualifying period of thirty-five years.

3. *Old age pension for the severely handicapped.* If they are recognized as being severely handicapped, the insured are entitled to this pension after their sixty-third birthday³ and after a qualifying period of thirty-five years.

3. An early claim for such an old age pension is possible from the sixtieth birthday.

In addition, *disability pensions* (pensions for those with a limited ability to work) are further distinguished as either *invalidity pensions* (pensions due to inability to work) or *vocational disability pensions* (pensions due to inability to follow one's occupation). A prerequisite for the payment of a pension due to an inability to work is the fulfillment of the qualifying period of five years and payment of mandatory contributions for at least three of the five years before the disability begins. These prerequisites are invalid if the cause of inability to work or to follow one's occupation was an accident at work, or an injury during military service. As a rule, pensions because of a limited ability to work are not limited until the worker reaches the normal old-age pension age of sixty-five. If there is a possibility of recovering the ability to work within a foreseeable period, then payments will be limited to three years or fewer (after the fifty-eighth birthday, payments are always unlimited). If the ability to work has not been recovered by the end of this period, then the insured again has a right to a (limited) pension. The difference between a pension for not being able to follow one's occupation and one for not being able to work is that the former is tied to the insured's measurable remaining ability to perform and thus to obtain further income. The latter, on the other hand, replaces a wage because it is granted only when the insured, over a foreseeable period, cannot pursue regular employment, or can pursue only low-paying employment, because of a handicap or severe illness.

The *surviving dependents' pensions* (pensions after death) grant the relatives of the deceased entitlement to a pension from the remaining pension payments. The size of such a pension is based on the relationship of the surviving dependents to the insured. Widows' and widowers' pensions are different, as are the education pension, the orphan's pension, and the pension for survivors of someone presumed but not proven dead.

The amount of the monthly pension to be paid is calculated according to the annual benefits accrued by the contributions made during the life of the insured. In addition, time of entry into the pension scheme and the type of pension are taken into account.

In accordance with these various grounds for the payment of a pension, the amount of the pension is calculated based on a formula (shown in fig. 5.1) that has been used since 1992.

The income index is based on the relationship in a calendar year between the individual benefit earner and the average benefit for all insured. Therefore, it takes into account individual contributions made and the length of insurance. The insurance period is usually longer than the period in which contributions were made. For example, contribution-free periods would be taken into account if they served to compensate for times when it was not possible for the insured to work, subject to compulsory insurance. There is a differentiation in the law between *fictitious qualifying periods* (e.g., military and civilian service), *credit periods* (e.g., disability, rehabilitation, raising children, occupational training periods), and *attribution*

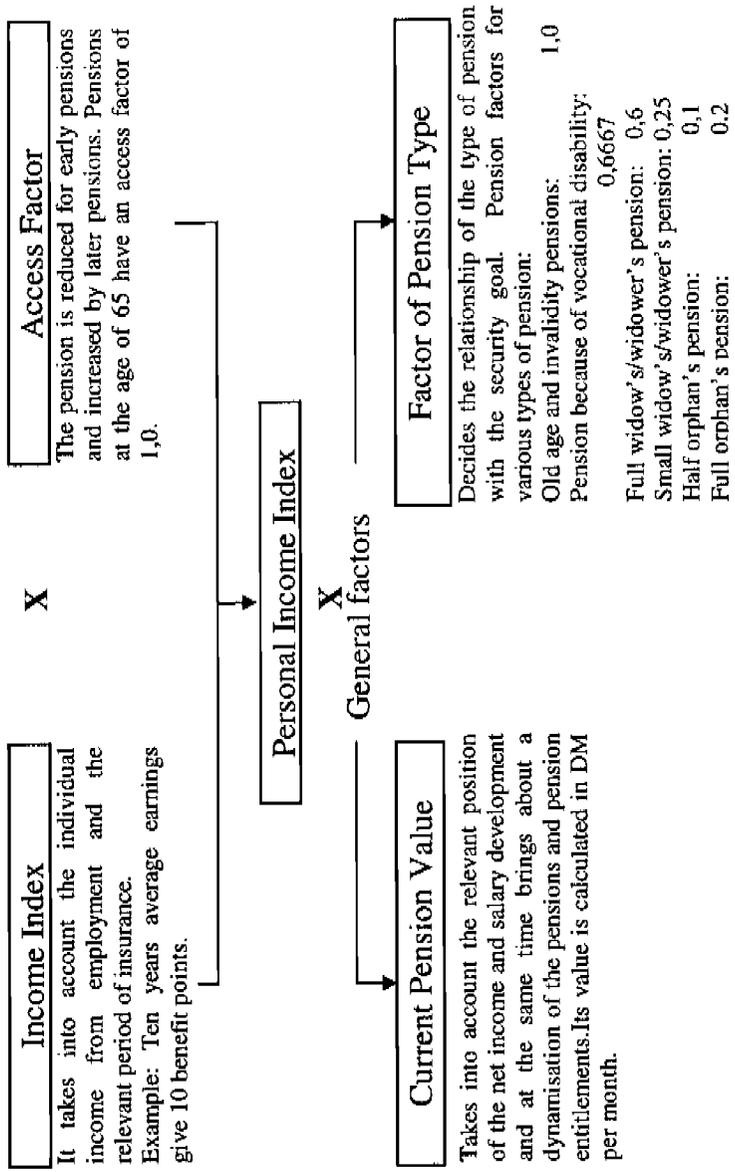


Fig. 5.1 The pension formula

periods (in terms of inability to work or to follow one's occupation). The regulations vary with regard to compensation and valuation of contribution-free periods. In addition to the contribution-free times, there are also *allowance periods* (for child care) and *contribution-reducing periods*. Periods of unemployment belong to both the contribution-reducing and the contribution-free periods.

The entrance or access factor is set according to the time of the insured's receipt of the pension, reducing the pension for early retirees and increasing it for late retirees. In the example of a claim for an early old age pension, the pension is reduced by an access factor of 0.003 for each month before the relevant, definitive age limit. This corresponds to a reduction in the pension of 0.3 percent (3.6 percent per annum) for each month of early pension payment. Pension reduction first became important in 2000, when the age limit for an early retirement old age pension rose. The *personal income index*, the product of the income index and the access factor, represents the individual portion of the pension formula. In addition to this, there are two general factors: the pension type factor and the actual pension value.

The *pension type factor* weights individual pensions according to their security goals. Pensions with full income replacement have higher weights than pensions with income-supplement or income-maintenance functions.

The standard benchmark pension, which is used to establish living standards security, is the level that an insured person with forty-five years of insurance at the average wage has attained. This "benchmark pensioner" has acquired 45 benefit points. The pension type factor is one. With an actual pension value of 48.29 for West and 42.01 for East Germany, a gross monthly pension of about 2,144 deutsche marks (West) and 1,839 deutsche marks (East) is calculated. After deducting contributions for health and nursing insurance, the net standard pension is 2,007.90 deutsche marks for West Germany and 1,741.11 deutsche marks for East Germany. The net standard pension is related to the net employment income of all insured; from this standard, the net benchmark level of 71.1 percent is calculated.

Comparing the German social insurance pension system to statutory old age protection systems that, like Germany's, aim to guarantee living standards and not simply to guarantee the avoidance of poverty—and, in terms of net replacement rates, the relationship between the average net pension and the average net wage—puts the German system in a somewhat ungenerous light. In Austria and Italy, the net replacement rate is 80 percent, whereas the German pension insurance scheme has a net pension level of about 70 percent. Yet despite the limited generosity of German old age pensions, the system is generous in terms of early retirement pensions and disability pensions.

However, it is noteworthy that in many countries, although the old age pension systems differentiate among individual occupational groups, it is almost impossible to set one net pension standard.

Figure 5.2 shows public pension expenditures⁴ as a percent of gross domestic product (GDP). It shows that expenditures rose from below 6 percent at the beginning of the 1970s to slightly below 9 percent in 1998. Until 1990, these figures are valid only for West Germany. If the reunification had not happened, the ratio of public pension expenditure to GDP would be below 8 percent. This can be explained by the comparatively low GDP but high expenditures in East Germany.

5.3 The 1992 Pension Reform

The expression “1992 pension reform” is somewhat misleading. This reform was designed in 1989 just before the fall of the Berlin wall, and was planned to take effect on 1 January 1992. At the time, politicians from all parties represented in the German parliament had discussed what to do to avoid a worsening of the situation of the (West) German pension system. Although the situation was not nearly as serious as it is today (in fact, the system almost produced surpluses without substantially increasing the contribution rate), it was also foreseeable that such a situation could not hold if demographic development was taken into consideration. The system had to be reformed for the following reasons:

- A shift toward a disadvantageous contributor-per-pensioner ratio was expected after the year 2000.
- Average age of retirement was low.
- Longevity was increasing.
- Patterns of employment were changing.
- Fertility was low.

To insure that these developments would not worsen the situation for the pension system, changes had to be made. It was not planned that funded elements be introduced into the system, merely that some changes be made within the existing PAYGO system. In order to achieve stability of the system, four measures were installed.

To begin, in response to the increasing longevity, the government decided to increase the age of retirement. The first step in that direction was a step-by-step increase in the regular age of retirement from sixty-three to sixty-five for men, beginning in the year 2000 and ending in 2001; for women, the age rose from sixty to sixty-five, beginning in the year 2000 and ending in 2006. Because an increase in the regular age of retirement is not necessarily connected to an increase in the actual age of retirement, however, an additional change was made. To give workers an incentive to postpone retirement, the pension formula was raised by an enlargement factor, which reduced the individual pension by 0.3 percent per month for retirement before the regular age and increased the individual pension by

4. Including disability and orphans' pensions.

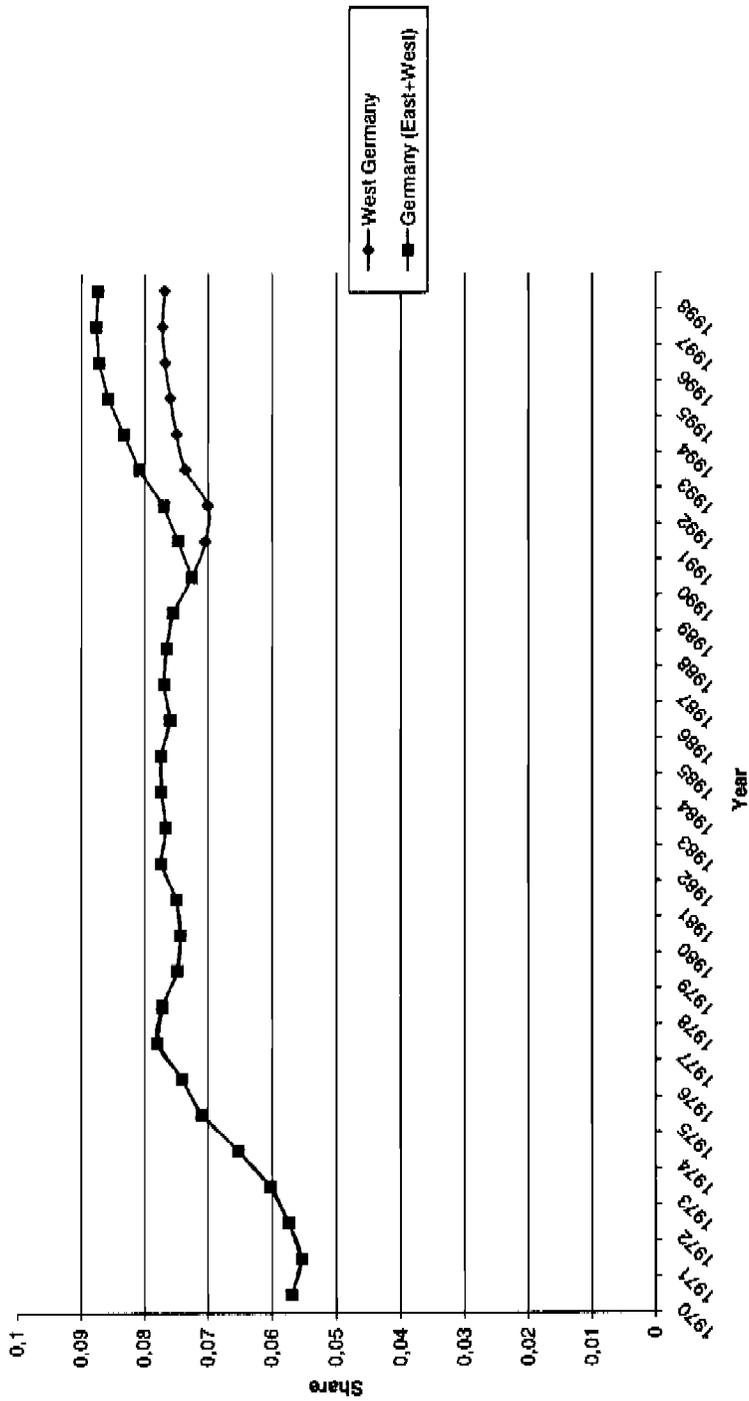


Fig. 5.2 Public pension share of gross domestic product in Germany

0.5 percent per month for retirement after the regular age. Both measures were put in place to increase the actual age of retirement. As useful as both of these measures may be, however, an increase in the actual age of retirement can be achieved only when *no other conditions* counteract it. Because a high average age of retirement also depends on the situation in the labor market, any measure for increasing the average age of retirement will have no effect when the labor market situation is unfavorable. In other words, all these measures will work only when the situation in the labor market is positive.

The second important element of the 1992 reform was a switch from adjusting pensions by the growth rate of *gross* wages to adjusting by the growth rate of *net* wages. This was conceived as a built-in stabilizer. Because any increase in the contribution rate for the pension system decreases net wages, pension will grow at a slower rate; this will have the effect of further reducing increases in the contribution rate. Besides this rather important effect, pensions will grow at a slower rate because net wages have increased less than gross wages over the past four years.

For intergenerational reasons, however, this cannot be considered fair. It is difficult to argue that there should be a more rapid increase in pensions (and therefore in the disposable income of pensioners) than in net wages, which are the disposable income of employees. In other words, for intergenerational reasons it cannot be considered fair that those who receive benefits will realize higher growth rates in their income than will those who finance the benefits. Finally, this measure has another effect connected to the growth of net and gross wages. By adjusting pensions by the growth rate of net wages, every change in the overall tax burden on wages, or any increase (decrease) in the contribution rates for other social insurance, such as health insurance or unemployment insurance, will affect pensions. For example, an increase in the contribution rate for health insurance or unemployment insurance will decrease net wages; therefore, the growth of pensions also will decrease. By indexing pensions to the growth of net wages, pensioners also indirectly finance social insurance.

If providing old age income as the German pension system does is considered socially desirable, then it is unreasonable that some groups of workers (such as civil servants) be excluded from financing it. This is why there is a transfer from the government budget to the otherwise separate budget of the pension system. This transfer makes the German pension system not solely contribution-based. Because transfers from the government budget are tax financed, it also has a tax-financed element; and because the German pension system covers more risks and more benefits than the old age income provision alone, a tax-financed element is justified. In the 1992 pension reform act, an increase in transfers from the government budget was undertaken. This increase had the estimated effect of lowering the contribution rate in the year 2030 by 1.7 percent.

Besides these main elements, the 1992 pension reform act had two additional components:

- A shortening of the contribution-free periods (e.g., military service and education), and
- A higher transfer from the Federal Employment Office (*Bundesanstalt für Arbeit*) for the unemployed.

The 1992 pension reform thus had three main elements: an increase in the regular age of retirement connected to incentives toward postponing retirement via the introduction of an access factor; a switch from adjustment by the growth of gross wages to adjustment by the growth of net wages; and an increase in transfers from the government budget. As Boll, Raffelhüschen, and Walliser (1994) showed, this pension reform would have been sufficient to keep the German pension system in generational balance.

5.4 The 1999 Pension Reform

In 1989, when the 1992 pension reform was formulated, the Berlin wall came down quite unexpectedly; and after one year of negotiations among the allied nations and East and West Germany, German reunification occurred. Before the actual reunification took place, an agreement was reached concerning economic and social union between the two states. The most important element of this agreement was East Germany's adoption of both the West German currency and the West German system of social insurance. The West German pension system was thus expanded to East Germany, and the consequences of this decision have been substantial. The 1992 pension reform was predicted to have a stabilizing effect, but one crucial point—reunification—was not taken into account.

After reunification the greatest problem was high unemployment. There are many reasons for unemployment in East Germany,⁵ but the most important was the unfavorable situation in the East Germany economy. As far as firms there were concerned, it was the authorities rather than entrepreneurs who were the decision-making units. The consequence was non-market factor allocation. Most East German firms were faced with too many employees and too little capital (see Burda 1991). Overnight, these firms saw a completely new situation. Suddenly it was recognized that the productivity of the labor force was too low, mostly because the per capita endowment of capital was too low. Nevertheless, a political decision was made to equalize Eastern and Western wages rather than market forces decide wages. This political decision was justified only insofar as politicians were afraid that people would “vote with their feet” against Eastern

5. Some of them are discussed in detail by Sinn and Sinn (1991).

wages, according to Tiebout's (1956) model. In addition to the wage policy, there was uncertainty about property rights in East Germany; that and the position of the *Treuhandanstalt*, as described by Sinn and Sinn (1991), led to substantial unemployment in the East.

To improve the labor market situation, the German government decided to use the pension system and its possibility of early retirement. The result was an easing of the labor market situation and the related strain on unemployment insurance, a negative effect on the pension system.

For a number of reasons, the labor market problems that arose in East Germany after reunification affected the financial stability of the German pension system. Most importantly, the system had to provide benefits to many new people with a comparatively small quantity of additional contributions because of high unemployment among the system's contributors. The government, in fact, used the pension system as a labor market instrument: Getting the unemployed part of the labor force as well as old employees of the labor market via early retirement was believed to be helpful to younger people in search of jobs. However, because the unemployment was unrelated to age structure but was rather a structural problem for the East German economy, early retirement did not help younger people gain employment. Instead, the government managed to improve its unemployment figures compared to what they would have been otherwise, but the costs of unemployment were placed on the pension system. Thus the burden of unemployment shifted from unemployment insurance to the pension system, counteracting the intentions of the 1992 pension reform. Furthermore, because of demographic developments, the pension system lost intergenerational balance; therefore, further reform was needed.

The 1999 pension reform was the government's reaction to demographic developments and to the situation created by the effects of reunification. The German pension system had developed from a more or less intergenerationally balanced system (as shown by Boll, Raffelhüschen, and Waliser 1994) in 1989 to a system with much intergenerational redistribution—because future generations were in danger of being left with the burden—in 1995 (as shown by Jagob and Scholz 1998). The political agreement reached during the negotiations over pension reform was to maintain the PAYGO system. The problem was to find a solution that would both maintain the living-standard function of the PAYGO-financed German pension system and redistribute the burden of demographic development in a fair way.

One cannot blame all the problems of the pension system on reunification, which in fact is only one reason the 1992 pension reform did not work as designed. There were other problems with the German pension system, as well, which can be summarized as follows:

- A low average age of retirement, as described by Börsch-Supan and Schnabel (1999).

- Demographic changes, including a low fertility rate and, for the elderly, increasing life expectancy.
- High unemployment, only partly a problem of the pension system. On the one hand, because of unemployment, the pension system receives only reduced contribution payments by the *Bundesanstalt für Arbeit*. On the other hand, because of the institutional settings of the German old age income system, the pension system will be forced to lower expenditures in the future because of lower contribution payments today.

The 1999 pension reform was the political compromise designed to counteract these tendencies. The government decided to keep the PAYGO system mainly as it was, without introducing any funded elements. The main elements of the 1999 pension reform, therefore, were to install a demographic factor, to take education periods into greater account, and to change the disability system.

In adding a demographic factor, the government's goal was to reduce the overall pension level in correspondence with an increase in life expectancy, as a means of distributing the additional cost of longevity equally across those who much pay contributions and those who receive benefits. Except for the demographic factor DF_t , the pension formula is the same as described in section 5.2. It consists of the income index IP_a , the access factor AF, the current pension value cPV_t , and the factor of pension type PT. The only difference is that the individual monthly pension will be adjusted by the overall demographic factor DF_t , which takes account of the evolution of the average life expectancy, LE:

$$R(t) = \sum_{a=0}^A IP_a \cdot AF \cdot cPV_t \cdot PT \cdot DF_t,$$

where

$$DF_t = \left(\frac{LE_{t-2}}{LE_{t-1}} - 1 \right) \cdot \frac{1}{2} + 1.$$

The German and Swedish ways of adjusting the pension level for the increase in life expectancy differ in their treatment of the generations affected. As Jagob and Sesselmeier (2000) point out, the Swedish reform treats different generations differently: The costs of living longer are always imposed on those generations that create them, which also makes the retirement age more flexible to some extent.⁶ The German pension reform had another approach in mind when it added a demographic factor, which was linked to life expectancy. As can be seen in the equation above, the adjustment was half of the increase in life expectancy over time. According

6. The limit of this flexibility is given by the occupational pension scheme.

to estimates, this would have reduced the pension level from about 70 percent currently to approximately 64 percent in 2030. The government chose to adjust the pension level by life expectancy, and this made possible a smooth decrease in the pension level over time. Although other factors, including average age, were discussed, life expectancy was chosen because it is the dominant factor in the pension system, as Rürup (1998) and Schmähl (1999) point out. It has changed most drastically over the years and, as far as actuarial calculations are concerned, is the most relevant factor.

The 1999 pension reform also took education periods into account more than the earlier system had. The idea was to create an incentive for raising children, which had been associated with high opportunity costs, mainly for women. Empirical analyses by Gustafsson, Wetzels, and Kenjoh (2000) show that in Germany, the probability of reentering the labor force is very low for women after they have children. Only those employed in the civil sector, where there is a high concentration of female employees, tend to return to work. Outside the civil sector, even if women reenter the labor force, they do so under conditions that are worse than they would have been if they had not had children and had remained in the labor market.

These indirect costs, the direct costs of lost income during the child-rearing time at home, and factors in the pension system worked in the same direction (i.e., time off for having children was taken into consideration only to a small extent by the 1992 pension formula). Taken together, these effects explain the low fertility rates in Germany over the past few years. To lower those opportunity costs a bit, and to create within the pension system an incentive for bearing children, these “education periods” were rewarded with higher entitlements under the 1999 pension reform.

To reduce the possibility of using early-retirement disability pensions as a labor market instrument, the government decided to set legal conditions for strict differentiation between *disability* and *unemployment*. Someone capable of working a maximum of three hours per day would receive a complete invalidity pension; someone working between three and six hours per day would receive half an invalidity pension. Anyone capable of working at least 6 hours per day had no entitlement to an invalidity pension. Furthermore, the level of the individual’s invalidity pension would be adjusted to equal the individual’s old age pension when retiring at age sixty. Furthermore, these new regulations had to work hand in hand with a new kind of labor market policy.

To summarize, after the 1992 pension reform was designed, the German reunification took place, which changed the situation for the pension system overnight. In addition, demographic changes and a decreasing actual age of retirement threatened the financial stability of the pension system. Therefore, further reforms had to be made. In 1997, the German government designed the 1999 pension reform. The major elements of this reform

were the addition of a demographic factor, the change in disability pensions, and systematic consideration of education periods. The demographic factor was designed to distribute the costs of longevity equally across all persons covered by the public pension system. Taking education periods into greater account created an incentive for having children, reducing the opportunity costs somewhat. Finally, a reform of disability pensions, in addition to new regulations concerning labor market policy, created a stronger differentiation between labor market policy and the pension system.

5.5 The Latest Reform Proposals by the German Government

When the new government was formed in 1998 by the Social Democratic Party (SPD), the demographic factor from the 1999 pension reform was abolished almost immediately. It was considered unfair for those who were already retired. The new government decided instead to change some institutional settings. At the time, some exceptions were available to the self-employed in terms of being members of the statutory pension system; as a result, a new kind of self-employed worker emerged. Like regular employees, these self-employed workers depended exclusively, or at least to a very high degree, on the firm for which they worked. Some individuals chose this kind of self-employment to avoid making contributions to the pension system. Therefore, the government decided to expand the public pension system to those self-employed who depended on a single firm. It also decided to take into account those people who worked in the lowest earning sector.⁷ Additionally, a decision was made to transfer tax expenditures to the newly introduced green tax on fossil fuels.⁸

In addition to these new regulations, which were developed by the government almost immediately after the election in 1998, a much more substantial reform is planned. To insure that this reform creates a higher degree of political confidence and stability, it is meant to be a common agreement of the political parties in Parliament and the relevant social groups in German society. So far, nothing has been finalized, but some approaches have been discussed. One element in common among all the serious approaches is that the German public pension system needs to be more fully funded; the following section presents four scenarios for this. The first scenario is the status quo, which shows what will happen if the pension system is not changed at all. The second shows the development of the pension system if the contribution rate is changed. The third scenario shows an equal distribution of the costs of aging within the PAYGO

7. A standard term in Germany used to be the *630-deutsche mark job*. Every job that did not exceed the upper limit of 630 deutsche mark was free of contributions to the pension system.

8. Note that the tax would have been introduced anyway.

system. Finally, the fourth scenario investigates what would happen if the third scenario were expanded by the addition of fully funded elements, reflecting the latest proposal by the Federal Minister of Social Affairs.

If a society—for example, in Germany—is aging, then a defined benefits system is associated with increasing costs. Taking as a base the demographic and economic presumptions that were accepted at the “pensions peak,” and keeping the statutory retirement age constant, a status quo projection leads to the contribution and benefit development curves in figures 5.3 and 5.4. If policy changes nothing within the pension system, the contribution rate⁹ will rise from the current 19.5 percent to a level of 24.2 percent in 2030. Because it is typical for a defined benefit system, the pension level stays constant at around 68 percent. The standard pension—which is the pension of an employee who worked forty-five years and earned exactly the average income—will increase from the current 2,173 deutsche marks to nearly 5,000 deutsche marks in 2030. Within the same time period, the total expenditures for the pension system will rise from about 336 billion to 1,062 billion deutsche marks.¹⁰

As usual, however, such a status quo scenario is neither the economically nor the politically desirable one. It is calculated simply as a benchmark for further scenarios. The next scenario shows what happens if the contribution rate is held constant at 20 percent. Such a policy has the effect of a switch from a defined benefit system to a defined contribution system. In the status quo scenario, the pension level is a more or less exogenously given variable that stays constant at a certain level, and the contribution rate must be determined endogenously and changes over time. When the contribution rate is fixed, the pension level must change as figure 5.5 shows. It decreases from its current level of 71 percent to a level of 56 percent in 2030. At the same time, the standard pension amount will grow. Compared to the status quo scenario, it will reach a much lower amount of 4,193 deutsche marks. At the same time, one goal will be achieved, as can be seen in figure 5.6; the total expenditures of the public pension system will still increase, but the increase will be lower than in the status quo scenario.

In the third scenario there is a switch from a defined benefit system to a defined contribution system. Unlike in the second scenario, however, the contribution rate will not be fixed at 20 percent—instead, there will be slight increase up to its maximum amount of 22 percent in 2030. This means that the contribution rate of the PAYGO-financed pension system

9. The contribution rate is levied on the gross wage of the employee whose employment is subject to mandatory insurance. It is shared equally by the employee and the employer; that is, having a contribution rate of 20 percent means that 10 percent is paid by the employer and another 10 percent by the employee.

10. All the calculations are in current prices with an assumed inflation rate of 1.7 percent per annum.

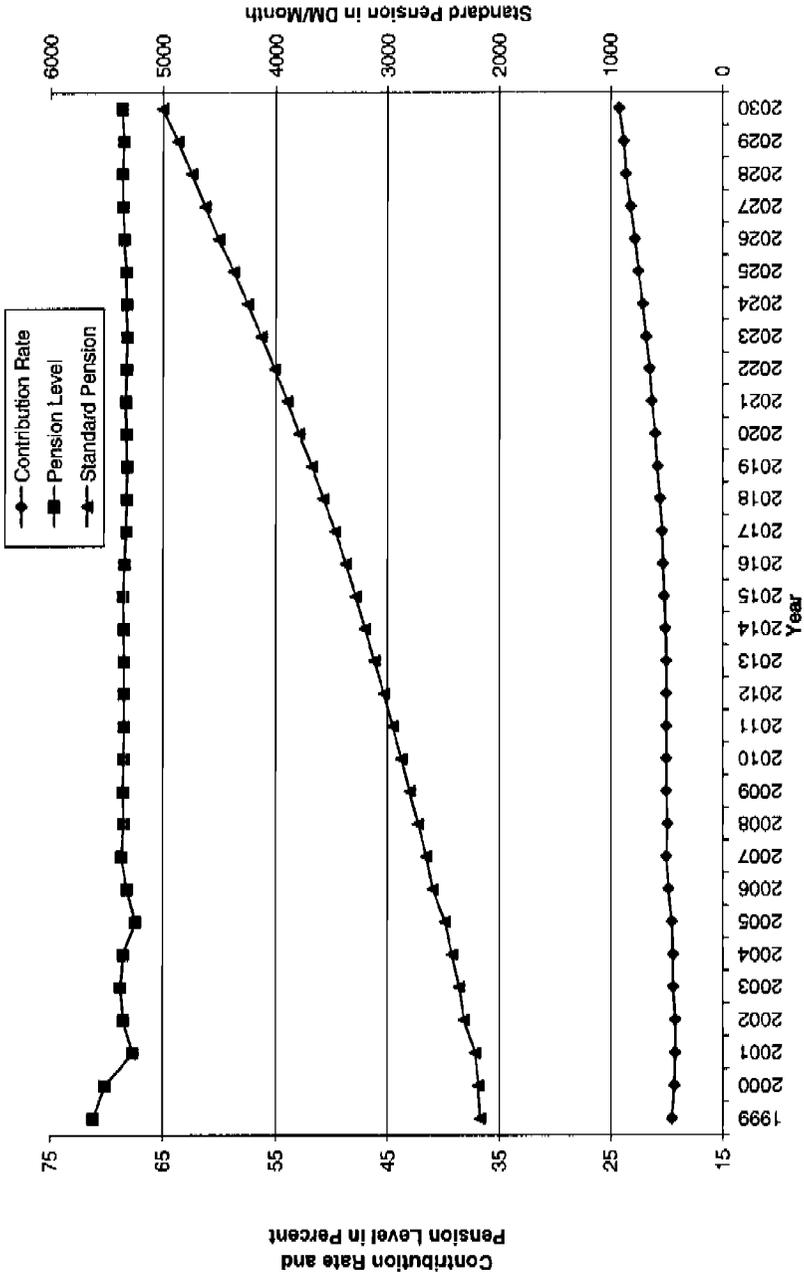


Fig. 5.3 Status quo contribution rate, pension level, and standard pension

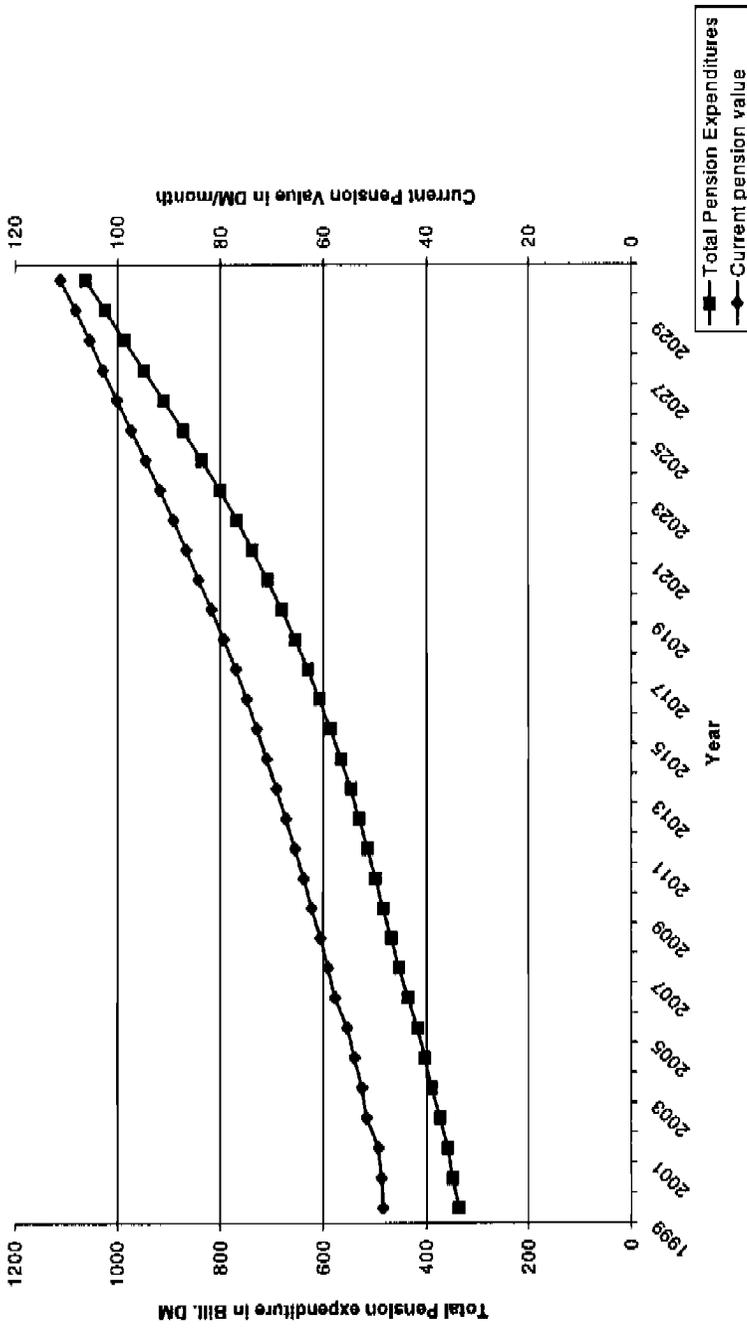


Fig. 5.4 Status quo total pension expenditure and current pension value

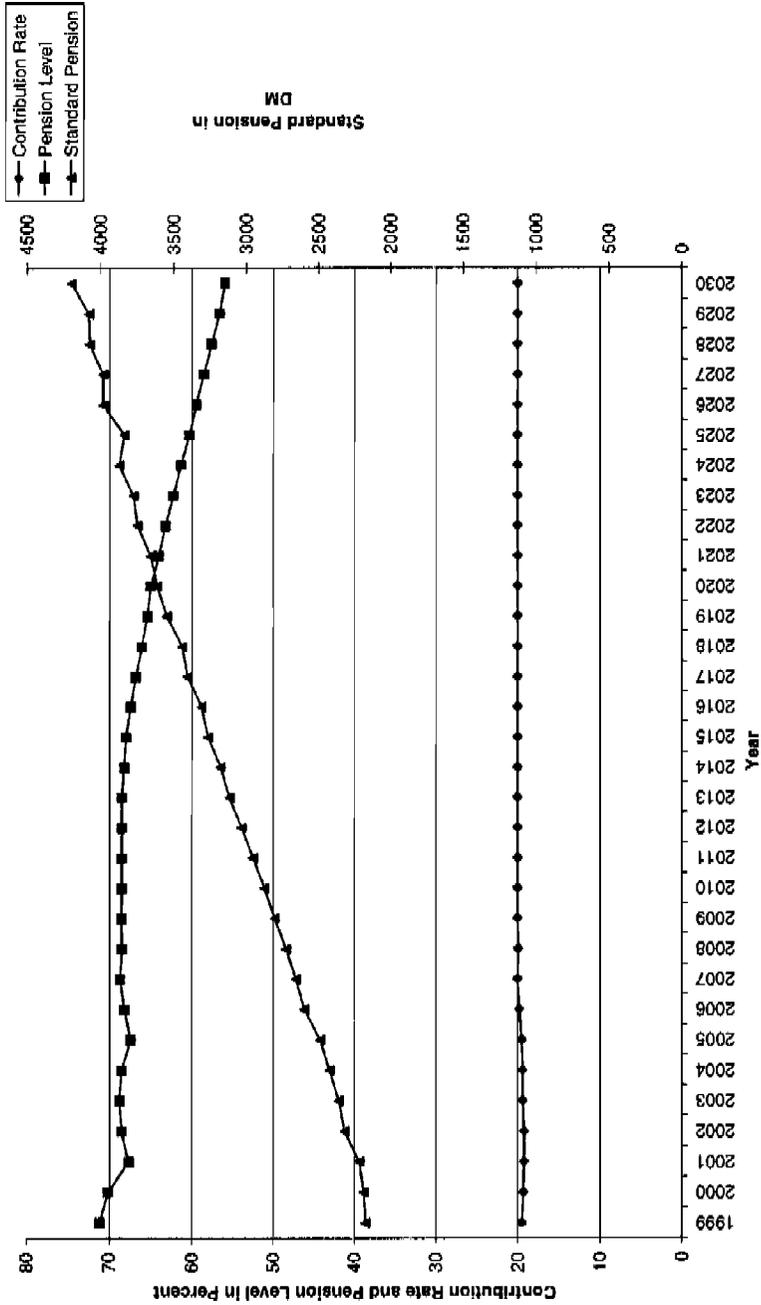


Fig. 5.5 Fixed contribution rate, pension level, and standard pension

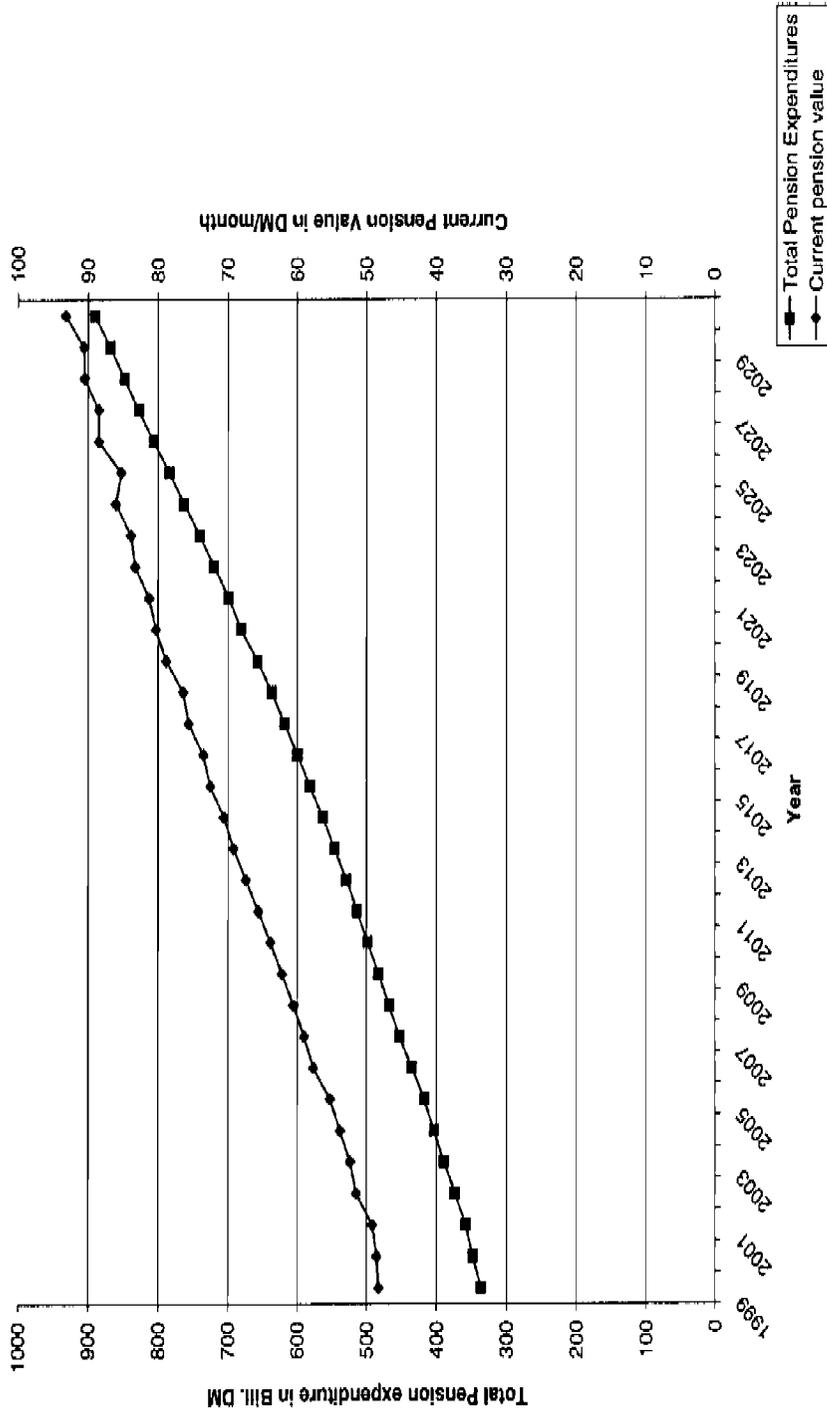


Fig. 5.6 Fixed contribution rate, total pension expenditure, and current pension value

will lie exactly between the first and second scenarios. The same is true for the standard pension: Its value in 2030 of 4,500 deutsche marks lies between the comparable values of the first two scenarios. The exact patterns of the contribution rate, the pension level, and the standard pension can be seen in figure 5.7. Total expenditures of the pension system in the scenario can be seen in figure 5.8. The intention of this policy alternative is to split the costs of aging. As can be seen, the contribution rate increases more than the fixed contribution rate, but less than in the status quo scenario. The opposite is true for the standard pension. This means that the costs of aging are distributed between both groups: on the pensioners by a reduced increase in their standard pensions, and on those who pay contributions by a slightly higher increase in the contribution rate.

If the political objective is to raise the contribution rate—in the sense of an equal division of the aging costs and, as more or less expressed by the proposal of the Minister of Social Affairs, to 22 percent at the maximum by the year 2030—then this objective can be achieved by the third scenario. It is also the minister's objective to guarantee future pensioners a high level of pensions with a comparatively low burden for the younger generations. It is commonly agreed by all political parties in Germany that they will maintain a PAYGO-financed pillar to guarantee that all additional risks that are currently covered by the pension system will still be covered. To satisfy all the demands of the politicians, the third scenario would have to be in place: The PAYGO-financed part is maintained, with an equal distribution of aging costs over all members of the public pension system.

To achieve a system that is (as much as in the third scenario) PAYGO-financed but that, at the same time, avoids a high burden for future generations and maintains a high level of pensions for future recipients, fully funded elements must be built into the system. One of the ways to introduce funded elements has been explained in a recent proposal: by starting the old age savings plan at 0.5 percent of the gross wage in 2003 and increasing it annually by 0.5 percent up to the amount of 7.5 percent in 2017, then keeping it at a steady 7.5 percent rate.

In such a case, the pension level would remain nearly constant at 68 percent, and the standard pension would be lower than the status quo scenario of 4,570 deutsche marks in 2030 by 427 deutsche marks. However, the overall benefit level, including a PAYGO pension and a capital pension—with a presumed interest rate of 5.5 percent—would be at 5,719 deutsche marks, substantially higher than the standard pension of 4,998 deutsche marks under the status quo scenario. Moreover, the PAYGO system would have developed into a mixed-funded provision system. In 2060, when this fully funded supplementary system reached its state of equilibrium, the overall benefit level would be about 90 percent. The effects of this approach are described in much more detail in table 5.2.

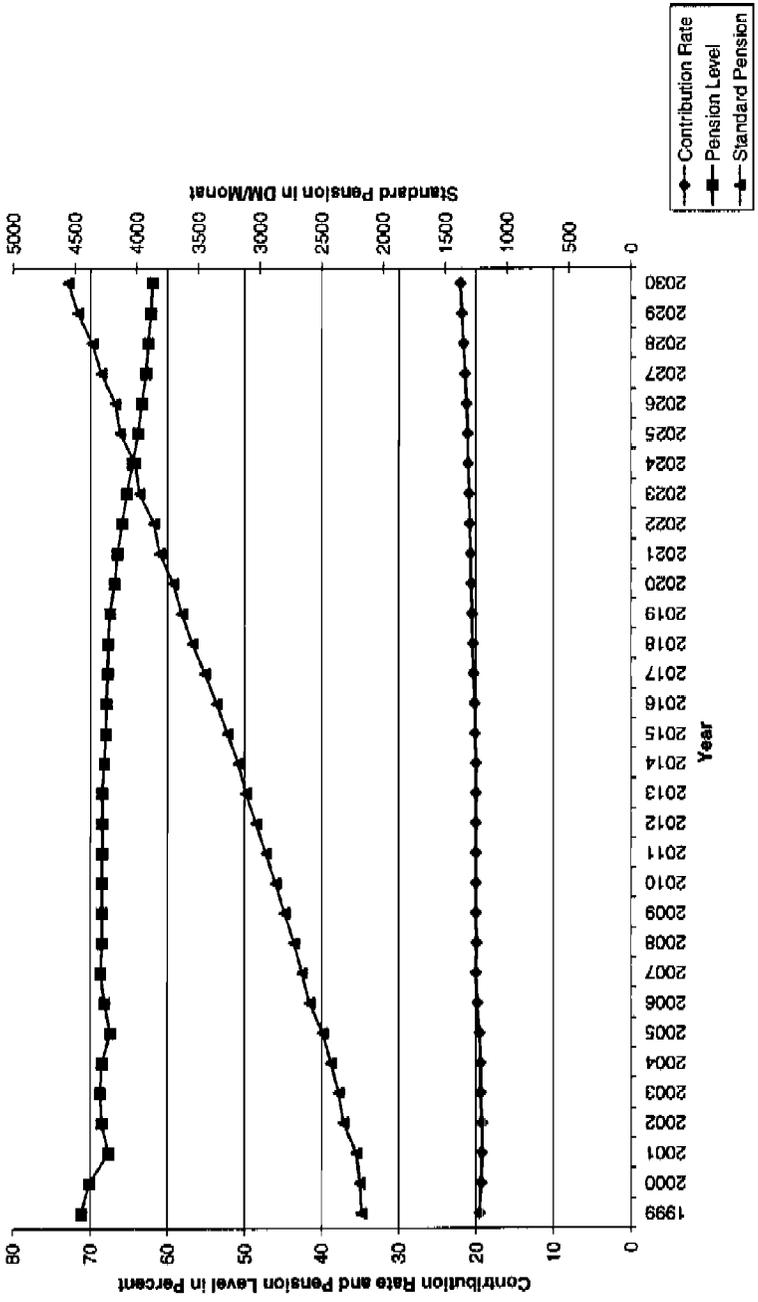


Fig. 5.7 Contribution rate, pension level, and standard pension

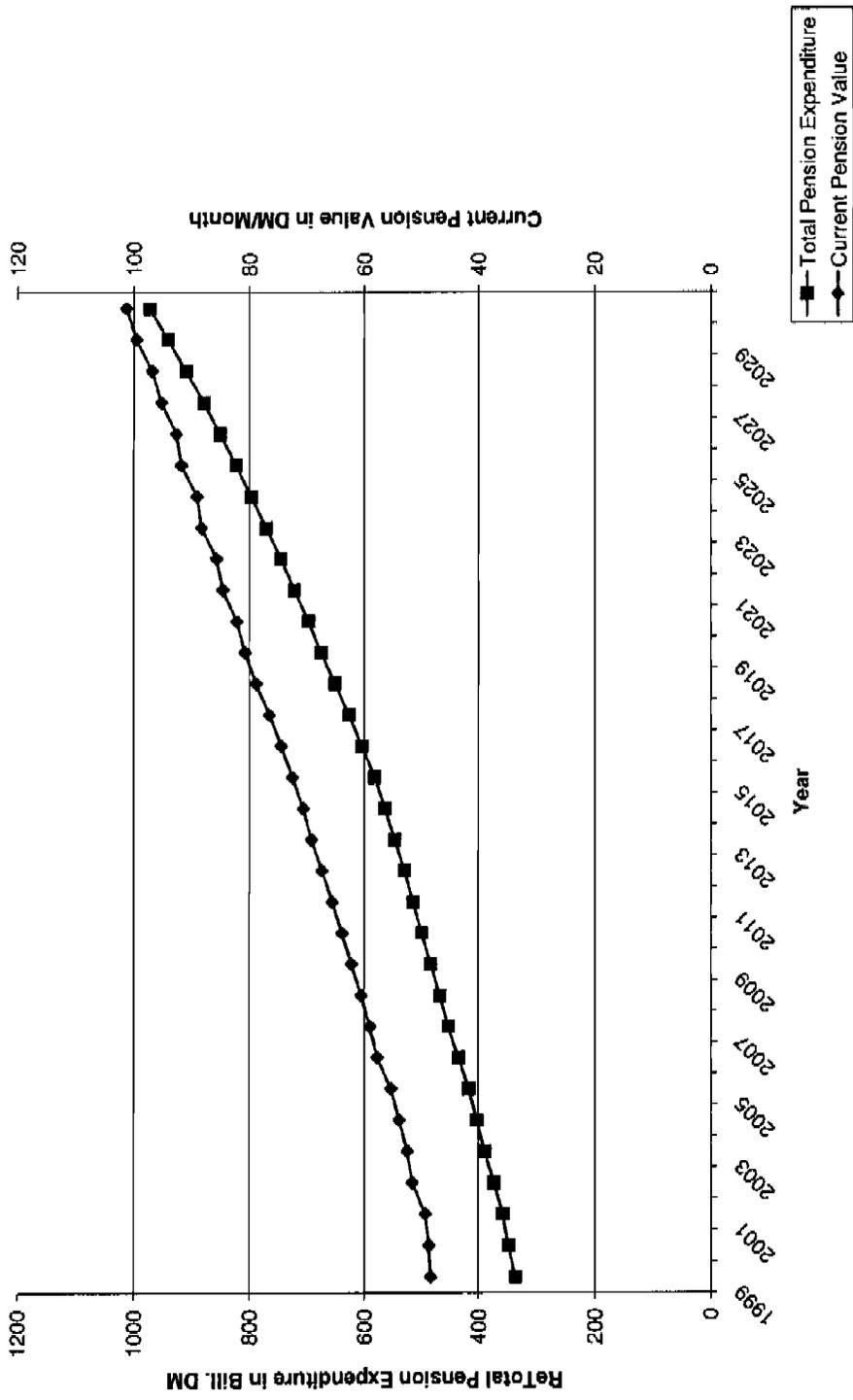


Fig. 5.8 Total pension expenditure and current pension value

Table 5.2 The Funded Pillar of the Pension Reform

Year	Contribution for Funding ^a	Pension per Month (in DM) in the Starting Period ^b for Retirees in Corresponding Year			Overall Supply (DM)	
		4.0%	5.5%	Gross Standard Pension	4.0%	5.5%
		Annual Interest Rate	Annual Interest Rate		Annual Interest Rate	Annual Interest Rate
1999	0.0	0.00	0.00			
2000	0.0	0.00	0.00			
2001	0.0	0.00	0.00			
2002	0.0	0.00	0.00			
2003	0.5	1.13	1.33	2357.55	2358.68	2358.88
2004	1.0	3.50	4.14	2407.50	2411.00	2411.64
2005	1.5	7.23	8.58	2456.55	2463.78	2465.13
2006	2.0	12.45	14.83	2549.25	2561.70	2654.08
2007	2.5	19.30	23.06	2593.80	2613.10	2616.86
2008	3.0	27.93	33.48	2646.00	2673.93	2679.48
2009	3.5	38.48	46.28	2701.35	2739.83	2747.63
2010	4.0	51.12	61.69	2757.60	2808.72	2819.29
2011	4.5	66.04	79.95	2814.75	2880.79	2894.70
2012	5.0	83.40	101.32	2873.25	2956.65	2974.57
2013	5.5	103.42	126.06	2935.35	3038.77	3061.41
2014	6.0	126.31	154.48	2996.10	3122.41	3150.58
2015	6.5	152.28	186.87	3056.40	3208.68	3243.27
2016	7.0	181.58	223.59	3118.05	3299.63	3341.64
2017	7.5	214.45	264.97	3187.80	3402.25	3452.77
2018	7.5	249.41	309.33	3261.60	3511.01	3570.93
2019	7.5	286.55	356.84	3360.15	3646.70	3716.99
2020	7.5	326.00	407.68	3463.20	3789.20	3870.88
2021	7.5	367.86	462.06	3564.00	3931.86	4026.06
2022	7.5	412.26	520.18	3665.70	4077.96	4185.88
2023	7.5	459.33	582.25	3776.40	4235.73	4358.65
2024	7.5	509.20	648.51	3891.15	4400.35	4539.66
2025	7.5	562.01	719.20	4002.75	4564.76	4721.95
2026	7.5	617.90	794.57	4121.55	4739.45	4916.12
2027	7.5	677.03	874.88	4232.25	4909.28	5107.13
2028	7.5	739.56	960.44	4335.75	5075.31	5296.19
2029	7.5	805.66	1051.52	4452.75	5258.41	5504.27
2030	7.5	875.49	1148.45	4570.65	5446.14	5719.10

Source: Bundesministerium für Arbeit und Sozialordnung

^aIn percent of gross wage. Ten percent of the capital coverage will be deducted for administrative costs; an average income earner with constant contribution payments is considered.

^bAssuming a pension period of eighteen insurance years and ten years of dependent's pension, the pension will increase each year during the period of payment by 2.6 percent. The pension of the corresponding retirees on 1 July of the corresponding year are shown.

In order to see what any of these approaches would really cost German society, one must consider the share of gross national product (GNP) in public pension expenditures. Figure 5.9 shows this for each of the first three scenarios. Not surprisingly, the status quo scenario leads to an increase in the ratio of public pension to GNP, whereas the third scenario leads to a rather constant ratio. If the ratio of pension expenditure to GNP is the target, then holding the contribution rate fixed yields the best result. Many facts must be considered, however, in making pension policy, so there is no one optimal way. The circumstances and the political point of view are always what decide the direction of pension policy.

5.6 Conclusions

The German pension system has developed from a more-or-less stable PAYGO system to a system that is threatened by the demographic changes within German society. As has been described, the German pension system recently had to be reformed for the first time in almost forty years. At that time, it was still in a more-or-less generationally balanced situation. The first problems occurred shortly after the 1992 pension reform was enacted. Reunification took place, with all of its economic consequences for the German pension system. The expansion of the German pension system was possible only because it was a PAYGO-financed system. A fully funded system never would have been able to manage a socially sound transition such as the one that took place.

In addition to reunification and its economic consequences, demographic change has made further reform necessary. In 1997 the German government enacted the 1999 pension reform, which was largely abolished by the new government after the 1998 election. So far, no other reform has enacted; yet there is a great need for reform because the demographic changes have not ceased, and, with the abolition of the demographic factor, the most important way to avoid an increasing burden on the pension system has disappeared.

Since 1998, the debate has centered on the question of funding versus no funding. As in most debates, both sides have good arguments for and against complete funding of the public pension system. The general arguments against a complete and fully funded system are summarized by Heller (1998), Orszag and Stiglitz (1999), and Barr (2000). At least for Germany, many calculations have been suggested to figure the cost of a transition toward a fully funded system, including one by Börsch-Supan (1998) showing that such a transition would be cheaper than expected. On the other hand, calculations by Eitenmüller and Hain (1998) show that such a transition is very costly. Agreement with either argument depends mostly on one's political viewpoint and social values.

The recent debate in Germany more or less represents a compromise

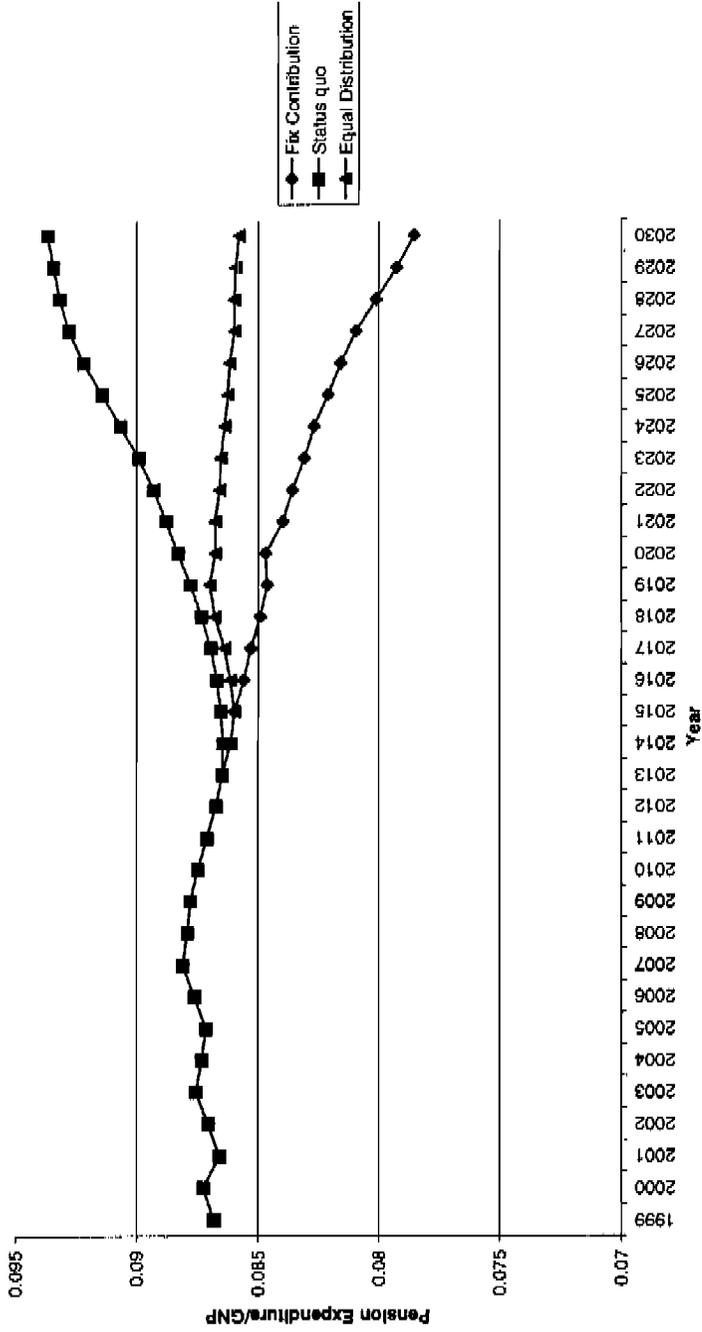


Fig. 5.9 Ratio of pension expenditure to gross national product

between points of view, with the intention of introducing a more funded element into the existing PAYGO system. This is not merely a compromise designed to keep both sides quiet, however; there are also convincing reasons for a mix of a PAYGO and a fully funded system (these are discussed in detail by Sinn 1999a, b). These arguments, and the attempt to enact a reform that can cope with the demographic change and survive the next election, are why such a partially funded system is likely to be adopted. Beyond demographic change, the decreasing actual age of receipt of benefits is the largest problem the German pension system faces. The 1992 pension reform took the first step toward creating incentives to postpone retirement. Nevertheless, the age of retirement has decreased, both as a consequence of the situation in the labor market and because of the incentives of the pension system itself. Recent reform plans attempt to deal with the problems created by the demographic change, but any reform that can be regarded as a solution for the problems of the German pension system must deal with early retirement as well.

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Comments Axel Börsch-Supan

Commenting on Bert Rürup's paper was not an easy task because it was a moving target—it still is. It probably also was a difficult exercise for him to write this paper. When he wrote the first version in early 2000, the pen-

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sion reform discussion was still dominated by a great deal of optimism among politicians—notably Walter Riester, German Secretary of Labor—as well as academics, sharing the hope that a substantive reform would be politically feasible even in reform-resistant Germany. At the end of March, when Bert presented the second version of his paper during the NBER-Kiel Institute Conference, the German government’s pension reform plan was in the middle of becoming a concrete proposal, very much with the help of Bert Rürup. The proposal was launched early that summer and entered the gruesome process of the political discussion—with the unions opposing the plan equally as much as quite a few leading figures of the opposition, although for very different reasons. During this process, Bert submitted this carefully packaged and cautiously worded third version of the paper. Not much later, in December 2000, the core of the reform proposal collapsed under the attack of the unions within a few days of hearings in Berlin. Now, in January 2001, when I am writing these comments, the remaining pieces of the original reform will be written into law, and there might be further changes in the days ahead—changes that are utterly unlikely to resuscitate the original “Riester plan.”

Bert Rürup’s paper begins with a description of the German pension system, then tells the stories of two past pension reforms in 1992 and 1999, before he sets out a range of reform options that seemed feasible in the late summer of 2000. Without much further ado, let me take issue with Bert’s view of the economics and the history of German pension reform. Indeed, the 1992 reform was overshadowed by the German unification—I should say, *beamed* upon by this fortunate event—but its main failure was not the increasing costs of East German pensions, as suggested several times in the paper (despite a brief disclaimer to the opposite in one place). Rather (and this will be a recurring theme in these comments), overly optimistic assumptions about fiscal sustainability, an astounding ignorance of economic incentive effects, and the desire to shift hard political decisions farther into the future made the 1992 reform only a timid one.¹

A reform of the reform was soon necessary, and indeed, the 1999 reform was more incisive by introducing an automatic adjustment to the impending demographic change. Then, however, came the change of government. Populist arguments identical to those that had made the 1992 reform so timid allowed the newly elected government in 1999 to revoke this reform of the reform, only to let the government discover a year later that something had to be done anyway. Discussing the options for this “reform of the reform of the reform” is the core of Rürup’s paper.

Of course, first describing a system and then telling its history is not an

1. Projections beyond the year 2010 were not published because they revealed that the 1992 reform could not stabilize the system during 2020–2040, the peak of population aging in Germany.

entirely innocent exercise if options for reform are to follow. Careful readers inspect the foundations before they appraise the building erected on them. Three ingredients are downplayed or not mentioned at all in Rürup's description of the German pension system and its reforms. First, the system is substantially more expensive, as suggested by the description. It costs not only 19.3 percent of gross earnings (the direct contributions paid by employers and employees) but an additional 9.5 percent (roughly) of gross earnings in indirect contributions. These indirect contributions consist of an earmarked part of the value added tax, of the new tax on fossil fuel, and of general revenues. Thus, total contributions are more than two and one-half times as high as in the United States (to take an example). Second, the system has massive incentive effects to evade and to retire early. Part of these negative incentive effects are the high tax-like costs just mentioned, which suppress labor supply and drive a substantial portion of workers into the gray or even the black market. Rürup describes the surge of "self-employment" but fails to appreciate this as a serious warning signal of negative incentives. In addition, the early average retirement age mentioned by Rürup is not an accident—it is systematically generated by the incentives created through the lack of actuarial fairness in the adjustment of benefits to retirement age, as in many other countries described in the Gruber and Wise (1999) volume. Third, the German pension system has no independent board of trustees; rather, it is essentially part of the German bureaucracy. It is important to realize this feature in order to understand the political dynamics of the German system, which lacks any independent control similar to the actuaries in the United States, who oversee projections of fiscal sustainability. Even the relevant demographic forecasts are made by the government and are subject to political compromises. Projections of longevity in the 1999 reform process were tailored to the perceived maximal politically sustainable contribution rate, and not drawn from the best available epidemiological and demographic knowledge. At times, this approaches the bizarre: the Labor Ministry's official fiscal sustainability projections differ between the domestic version and the one delivered to the Commissioner for Economic and Financial Affairs of the European Union (EU; Economic Policy Committee 2000).

In appraising Bert Rürup's reform options, it is crucial to understand the significance of these three points. I proceed here in the reverse order. First, the demographic and employment projections underlying the reform options in section 5.4 of the paper seriously downplay the financial strain on the German pension system. The status quo projection is an increase in pension expenditures from 8.7 percent of gross domestic product (GDP) in 2000 to 9.4 percent in 2030 (see figure 5.8 in the paper). According to the official estimate delivered by the German government to the EU, however, the projected increase is from 10.3 to 14.6 percent of GDP. Rürup uses a different base, omitting substantial parts of the

PAYGO system;² the main difference, however, is the severity of the relative increase: Rürup projects an 8 percent increase, whereas the EU figures imply a 42 percent increase of the fiscal burden. Underestimating the fiscal strain of the PAYGO system makes timid parametric reforms within the PAYGO system appear more feasible.

Second, the different reform options—status quo, freezing the current contribution rate, and equally sharing the burden—have very different microeconomic side effects because they imply very different tax rates. Unfortunately, the resulting incentive effects are completely ignored in this paper, although they are at the center of the current debate on labor market policy in Germany. The wedge between net and gross wages in Germany is one of the largest in the world, due to high labor taxes and social security contributions. The government has vowed to reduce these, being aware of the incentive effects on employment; indeed, a tax reform has already taken a first step this year. The same rationale applies for social security contributions, which are overwhelmingly perceived as taxes—as evidenced by surveys as well as actual evasion (Boeri, Börsch-Supan, and Tabellini 2001). The government has a good reason for ending the steady increase in taxes and contributions, but this implies freezing or even reducing contributions, not raising them further in the equal-sharing scenario.

Third, shifting a part of the contribution burden to non-labor-related taxes might be a great temptation, but would amplify the incentive effects insofar as it would reduce the link between benefits and contributions even farther. Few German drivers appreciate the fact that they support the social security system by refueling their cars. As mentioned earlier, about a third of the social security budget is already financed indirectly—and this means by a pure tax.

Because Germany has to shoulder the large pension burden in the decades ahead one way or another, the main goal of a pension reform must be to make this burden as light as possible. First, the actual burden can be reduced by abolishing the incentive effects of early retirement. Average retirement age in Germany is currently about fifty-nine years; a shift by two years alleviates the burden by about 10 percent. Simply making the system actuarially fair (in the sense of equalizing the present discounted value of pension benefits across retirement ages) is estimated to shift the retirement age by about two and one-half years (Börsch-Supan 2000b). Second, taxes create deadweight losses on top of the actual burden. Thus, it is imperative to minimize the tax character of social security contributions. Notional defined contribution accounts that show the workers the link between their contributions and their pension rights are a big step in that direction; they also minimize the well-known political economy problems of public pension systems and make the system more “tinker proof” (Browning 1975). Third, a burden is easier to shoulder if it is dis-

2. Such as pensions to civil servants and various supplements; see table 5.1 in the paper.

tributed more evenly over time. This is true of a substantial role of funded pensions: They smoothen the pension burden over time, simultaneously providing automatically actuarial fairness and a tight link between benefits and contributions. Freezing the current contributions to the PAYGO system while also retaining the total replacement rate in a mixed system implies a division of labor between the PAYGO and the funded pillar of about 2 to 1—much in line with the ratios in Switzerland, the Netherlands, and the Anglo-Saxon countries.

This is not the place to discuss a transition to such a reformed multipillar system in detail (Börsch-Supan 2000a). Let me remark only that the discussion in Germany—partially reflected in Bert Rürup’s paper—treats the structural aspects of pension reform like a stepchild. Adverse selection, pension fund and annuity market regulations, administrative costs of a mixed system—all these are important issues that deserve much more thought and economists’ attention in the German discussion of pension reform options, in addition to a thorough understanding of the true costs of the system, of the incentive effects it exerts, and of its political exposure due to its lack of independent actuaries and overseers. Particularly in this last respect, the failure of last year’s reform attempt (the original “Riester Plan”) is a sad but instructive show-piece of economics and the political economy.

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Discussion Summary

Martin Feldstein inquired whether the notion of the discussant that there was scope for a Pareto-improving transition because of reduced labor market distortions had taken into account that someone had to pay more tax. When *Axel Börsch-Supan* indicated that he had not considered that,

Feldstein concluded that there is no Pareto-improvement, as those early taxpayers would be worse off. Börsch-Supan replied that, indeed, someone has to pay more, but not necessarily more taxes, because whether contributions are viewed as taxes or as insurance premia is a question of perception and not one of economic theory. He reported on polls that allow the conclusion that if money is funneled through the pay-as-you-go (PAYGO) system it is considered taxes and if it is funneled through savings plans it is considered premia, so that the former has distortionary effects and the latter has not, even if both are actuarially fair. In such a world, a switch toward funding would remove distortions that it otherwise would not and would therefore permit Pareto-improvements. *Assar Lindbeck* added that some cohorts are necessarily worse off because of the assumption that old pensioners have to be bailed out by tax. Lindbeck asked whether it is really not allowed in the European Monetary Union (EMU) to issue recognition bonds that make implicit pension debt an explicit government debt. *Axel Börsch-Supan* responded that with Germany near both the 60 percent limit for government debt and the 3 percent limit for net borrowing set by the Maastricht and Amsterdam treaties, there is little scope for additional debt financing. Regarding the idea of having escape clauses whenever there is a past debt for former generations, he was positive that the European Commission would not like to open this Pandora's box because of the probable repercussion of all kinds. He concluded that for all purposes the bond financing of transition is infeasible.

Laurence J. Kotlikoff pointed out that neutrality of going from a PAYGO to a funded system means that the change is a zero-sum game in present value; that is, if a generation benefits today by 100 euros, in present value, some other generation has to be hurt by 100 euros. He made the example of a policy that hurts current old people by 100 euros today in order to help the generation of fifty years from now by 100 euros in present value. While the future generation's benefit was only 100 euros in present value, however, it would be a lot more in fifty years: approximately 700 euros using a risk-free rate of 4 percent. He concluded from this that sacrifices today are relatively small because of "the money-making machine called capital, which can have a large impact on the actual welfare and utility of future generations. Kotlikoff challenged the view advocated by many participants that a mixed system consisting of a funded component and PAYGO component is superior with respect to risk sharing because of more diversification. He contended that the PAYGO mechanism increases risk rather than reduces it because it does not resolve problems early and therefore does not indicate how they will be resolved. In contrast, in a funded setting it was clearer exactly how resolutions of these problems arose. Kotlikoff further pointed out that there is no evidence of intergenerational risk sharing from tests based on consumption data, at least in the United States. He reported that the data reveal that over time in cohorts

that do very poorly in terms of their income, consumption goes down, and the consumption of cohorts that do well goes up, indicating that little intergenerational risk-sharing is apparent, whether through the extended family or through the government. He suggested that the PAYGO system may be exaggerating the risk that it is supposed to reduce.

Bert Rürup remarked that he observed a broad consensus that it is necessary to shrink the PAYGO system in order to reduce its cost but that the critical question is how to compensate for the reduced provision. As to the issue of whether there should be a mandatory individual savings plan or mandatory occupational pensions, he stated that the answer is a normative one depending on the interpretation of what is called the “Sozialstaatsgebot” in the German constitution and, ultimately, the confidence in the responsibility and sovereignty of individuals regarding their requirements in old age. He expressed his belief that every society should be sovereign in deciding the degree of old age protection organized by politics. The task for economists, in Rürup’s view, is in part to identify positive and negative incentives of the system, but also to show alternatives with respect to financing a politically defined pension level.

