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Towards A Funded System of Social Security: Design and Implications – The Case of Germany –

by

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**Towards A Funded System of Social Security:
Design and Implications
– The Case of Germany –**

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Hans H. Glismann and Ernst-Jürgen Horn

October 1997

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Abstract

What would a feasible system of social security in Germany have looked like in the year of 1995 and beyond? In order to find an answer we describe three base systems: (1) a purely funded system of social security, (2) a fully mandatory funded system of social security, and (3) a partially mandatory funded system. It is argued that – neglecting problems of transition – a purely funded system would be the best in economic terms; a fully mandatory funded system would need almost as many controls as the currently prevailing system (often labelled "pay-as-you-go system"). A partially mandatory funded system, assuring some kind of basic income, would need less controls and less governmental authority than the fully mandatory system but more than a funded system.

After quantification of two scenarios which represent components of the three base systems, a system of taxation with respect to contributions and/or benefits is discussed which is at the same time simple in terms of costs of bureaucracy and does not tax economic growth more than necessary.

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A. Introduction

1. The Setting

With a grain of salt the history of social security in Germany over the past 150 years can be summarised by saying that the half-life period of the laws on social security has been declining from some 75 years to today's 7 years.[1] In fact, the rules of the old-age pension game seem to change on a daily basis at present. This quite obviously is a somewhat odd situation: Providing for old age is a process of saving over the first part of life and of consuming past savings and interests on these savings in the second part of life. In other words: Old-age security is a very long-run phenomenon. On the other hand, politicians and the people's representatives are focused mainly on short-run phenomena. Thus, an economist would propose that politicians should not interfere regarding private savings for old age. Indeed, it was argued by Buchanan in 1968 that the main flaw in the US system of social security was that "political gimmickry can produce a collapse of the whole structure" (Buchanan 1968, p. 390).

It is always appropriate to introduce and define the subject that one is dealing with. There are basically two approaches to old-age security, one is collectivistic and the other one individualistic. What we observe today in most – if not all – industrial countries is some kind of collectivistic social-security system. These are systems where one group of people – the labour force – pays taxes or social-security contributions in order to finance another group of people, i.e. pensioners. This is quite different in an individualistic framework where anybody who pays into the pension system does so for his own benefit; his contributions bear his name tag. When the individual retires he will receive grosso modo exactly what he had hitherto paid including the interests on his payments.

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[1] Cf. Glismann, Horn (1997) for the whole argument and a short historical overview of German social security.

"Grosso modo" refers to the fact that there are taxes to be paid and that the individual has no certainty about his life span. It is the latter part of the individualistic pension system, and that part only, which may be subject to insurances.

In the following we shall call the individualistic type of social security a "funded" system and the collectivistic variant an "unfunded" system.[2]

It is often said that it would be useful to look across one's own borders at other countries in order to see how the system of social security of any kind works there. For example, with respect to transforming an unfunded system into a funded system one should look at the example of Chile; Chile was one of those countries that did perform such a transformation. It has to be borne in mind, however, that international comparisons are in many an instance of a limited usefulness: Countries are different with respect to size (this concerns for example the impact of such a transformation on interest rates, national interest rates as well as those prevailing on the world capital market), they are different with respect to income levels (whether the average income of labour is about 2 000 $ per year or 20 000 $ affects expectations as much as savings ratios), and they are different with respect to attitudes (the degree to which the individuals have faith in the seriousness of government and private institutions; expectations regarding the rate of inflation and future economic growth may differ just like the relative preference for work and leisure). Not least, there are major differences with regard to the unfunded systems prevailing in the countries

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[2] It should be mentioned that the funded system treats the accumulated savings plus interest payments just like any other property of a person, which means that in the case of death the full amount of capital goes (after deduction of inheritance taxes) to the legal heirs. Also, it is entirely in the hands of the individual whether he wants to work and save until his death or whether he will retire, say, after 30 years of work. Needless to say that the funded system can be interpreted as an ideal – i.e. pareto-optimal – system because the individual preferences of contributors will be recognised.

which are compared. Thus, it is hard to see how one country's transformation performance can be taken as a model of what might happen in another country.

Quite a different matter is the use of international comparisons in order to arrive at what has been called a "normal pattern". The normal pattern in this case would be more like the average pattern of other countries regarding structural changes in the system of social security. However, the systems of social security vary considerably across countries regarding the relative importance of social security organised by governments, of corporate pension systems, and of other privately organised provisions for the old age; in addition, the above mentioned differences in the rate of contributions and, grosso modo, in the overall savings ratios tend to make averages of the normal-pattern type quite meaningless. What is more, the number of countries, industrialised or not, that have effectually tried to change from an unfunded system to a funded system, is too small to arrive at any meaningful normal or average pattern.

Nonetheless, the Chilean and the Australian cases are considered to be prototypes for transforming unfunded into funded systems of social security. So what can we learn from the transformation process in these countries?

2. Reforms of Social Security in Australia

Australia is currently in the early status of introducing a system of mandatory contributions to private-pension funds (Edey, Simon 1996). For most of the employees, the scheme will eventually replace, either fully or partially, the current government social-security system. The mechanism for this replacement is the application of existing means meant to result in a projected accumulation of private-pension savings. The scheme has been implemented by building on the existing financial infrastructure for voluntary retirement pension funds. Nonetheless, a number of policy issues remain to be dealt with. Perhaps the most important is the impact of the system on retirement decisions. A number of fea-

tures of the system effectively create incentives favouring early retirement and continued reliance on the government pensions. Also important is the increasing complexity of the system, a result of the combination of rule changes and grandfathering (i.e. the honouring of claims accumulated under the old system) of existing rights at each stage of the process.

The new system really began with the introduction of the SGC (Super-Annuation Guarantee Chance) legislation in 1991. However, the introduction of award super annuation in 1986 was an important precursor to this. In 1985, the union movement argued for, and received, a commitment to establish a 3-per cent employer-funded annuation benefit, in view of the similar general wage raise. This was implemented by inserting a requirement into employment awards that employers pay 3 per cent of wages into a nominated industry super-annuation fund. Many different union-organised industry-super-annuation funds were created to receive the contributions which are beginning to attain a significant size. As awards were renegotiated, the coverage of super annuation was increased to many more members of the workforce than had previously been the case. Nonetheless, the coverage of this scheme was not universal and, due to negotiation delays in some areas, not all union members receive the benefits immediately.

In 1991, the government extended the coverage of super annuation to all employees by introducing the SGC legislation. The legislation mandated minimum levels of super-annuation contributions by all employers on behalf of their employees. The levels were fixed at 5 per cent (at 3 per cent for employers with a payroll of less than 500 000 A$) and were scheduled to rise until they reached 9 per cent in the 2000/2001 financial year. The government also reckons the possibility of raising contributions to 12 per cent through employee contributions at some later date. The structure of the legislation was that employers were not technically mandated to contribute to employee-super-annuation, but if they did

not, the government would impose a Super-Annuation-Guarantee Chance of an equal amount through a tax system and then redistribute this to the employee. The SGC tax payment would not be tax-deductible and would have an additional administration charge included. Thus, it would be cheaper for employers to make the super-annuation contributions themselves. Participation is mandatory and employers are required to make contributions for all their employees, subject to some exemptions for part-time and casual workers who do not generate sufficient balances. These exemptions are made in order to reduce administrative problems associated with contributions of very small amounts. In all cases where people do not accumulate sufficient balances to fund their retirement expenses, the tax-financed public age-pension will continue to act as a safety net. Individuals may make additional voluntary contributions. These are typically in the range of 2 per cent to 10 per cent of salary. However, the taxation treatment of additional contributions is different to employer-provided super annuation as they have to be paid out of post-tax income. Contributions by the self-employed are essentially voluntary. Up to the threshold amount they can benefit from employer-treatment over contributions for tax purposes. They can also qualify for the government co-contribution on any contributions as employees in line with the schedule.

There are practically no restrictions on where funds can be invested. The only significant one is that no more than 10 per cent of funds can be invested in the business of the sponsoring employer. In the 1960s and 1970s rules existed which required super-annuation funds to invest a minimum of 30 per cent of their assets in government securities, but these rules are no longer in place.

Benefits must be "preserved", i.e. made unavailable to the beneficiary, until age 55, subject to exemptions in cases of hardship and some voluntary contributions which can be withdrawn on change of employment. Traditionally, the most common form of benefit has been a lump sum. More recent provisions are

aimed at encouraging people to take an annuity. The type of annuity purchased can be either a traditional annuity (which provides a given income for the rest of a person's life) or an allocated pension. An allocated pension pays an annual income based on investment earnings. The allocated pension is not guaranteed to last for the retiree's lifetime. The difference between these two products is that with an annuity the life insurance company bears the investment and mortality risk, while with the allocated pension the retiree does. Thus, if a person with an allocated pension dies relatively early, there may be a lump sum to be distributed to their estate. If a super-annuation-fund member dies before pay out, the accumulated contributions are paid to the estate and are tax-free, regardless of the age of the beneficiary.

Mandated life insurance or disability provisions do not exist. However, many funds offer these facilities, taking advantage of the fact that they can obtain cheaper life insurance without the necessity of everyone having a medical (i.e. pure life insurance) cover. Disability insurance is also offered by some on a similar basis. This usually involves the employer paying an extra contribution to cover the costs of the insurance. These policies can pay benefits as either lump sums or annuities and the choice made will depend upon individual circumstances. Some schemes also provide annuities on retirement that will reward to surviving spouses if the retiree dies relatively early, but this is not a mandated requirement.

3. Reforms of Social Security in Chile

Chile has introduced a radical change towards an optional funded pension system (Edwards 1997). "Optional" means that all persons concerned have the choice to opt into a private-pension scheme or to rely on the still existing scheme. The reform of Chile's social-security system replaces the pay-as-you-go regime with a capitalisation system, based on individual retirement accounts

managed by private companies known as "Administratores de Fondos de Pensiones", AFPs. Each AFP can manage only one retirement fund, and there is a strict separation between the retirement fund and the management of the firms' assets. Largely as a result of this one-fund-per-AFP rule and of a regulation that establishes a minimum rate of return on the funds, there has been a very low degree of actual portfolio diversification across AFPs.

The system is mandatory for individuals working for a formal employer (the difference between the formal and the informal sector is in a sense a speciality of Latin-American economies, which cannot be easily compared with conditions in industrial countries; by a rough definition, employment in the informal sector pertains to all kinds of occupations not covered by government regulation and which are out of reach of taxman (the black or grey economy)). Individuals, however, can freely decide which AFP will manage their retirement funds. Moreover, individuals are free to transfer their funds freely among the different management firms. When individuals retire they can choose to buy an annuity, or to withdraw their funds according to a predetermined (actuarially fair) plan. The system also has a survivors' term life insurance component, and a disability program funded by an additional insurance premium. In the reform system, the state continues to play an important role. It regulates and monitors the operation of the management companies, and guarantees "solidarity in the base" through a minimum pension.

All individuals employed in the formal sector are required by law to participate in the funded social-security system. They have to contribute, to the AFPs of their choice, 10 per cent of their wages. These funds are invested by the AFP and are accumulated on an individual retirement account. Participants can switch management funds up to 4 times a year. There is an additional contribution of roughly 3 per cent of wages as a premium for term life and disability insurance. Both of these contributions are subject to an upper limit wage base,

which is currently equivalent to approximately 2 000 US$ per month. Self-employed workers are not required to participate in the system. They have the choice, however, to set up individual retirement accounts of their own which are basically subject to the same regulations as those of the formal-sector employees.

The Chilean pension reform has successfully replaced an inefficient, unfair, insolvent pay-as-you-go system with a reasonably well-functioning privately managed system. Up to now the rates of return of the new system, as well as the pensions being paid out have been rather high. This trend, however, is likely to decline in the years to come, as Chile's rates of return begin to converge towards world-market levels. An interesting issue seems to be how the system will react to this new state of affairs. It is not unlikely, then, that the Chilean system will continue to evolve providing us with fresh lessons in the future. Reforms of the basic reforms are already on their way. The main issue in this respect is how to reduce the cost of administration of the AFPs. It is expected that these reforms will result in a decline in costs of administration which seem to have become increasingly out of hand.

4. Lessons from Australia and Chile

It is hard to draw lessons from too short an experience. Social security is a matter of (four or more) decades. At this time one might venture to conclude that in both countries, firstly, funded social-security systems have proven to be more efficient than the formerly existing pay-as-you-go system. Secondly, the experiences in Australia and in Chile demonstrate that a radical change away from pay-as-you-go systems can be efficient. Furthermore, the experiences of these two countries reveal that such a reform requires a strong political determination. It also shows that it is not sufficient to make only changes on the margin. Thirdly, the example of Chile shows that administrative misconceptions

can endanger the whole system. High costs through manipulations (of sales agents who pass "their" clients from one fund to another, just for reasons of commissions) can, however, easily be avoided.

All in all: If a change towards a funded social-security system is to be introduced, the change must be a radical one. All people must be convinced that this change will be irreversible. What remains unconvincing in both countries' experiences, is, however, the relationship between the new system and the still existing safety net of government-provided minimum pensions. And in the case of both countries, it has to be noted that these reforms have essentially only dealt with the old-age provisions for employees in the so-called formal sector. The question is, then, how to deal with social security regarding those people who are not engaged in a kind of formal employment An important lesson from these experiences is, however, that a change towards a funded system can be performed under rules that acknowledge claims accumulated under the previous pay-as-you-go system.

B. Basics of a Funded System and Its Variations

1. Prolegomena

The funded system of social security is intended to substitute, in Germany, the existing government pension system (GPS)[3]; it is not meant as a substitute for corporate or other private-pension schemes. It should be added that the existing German GPS has neither defined contributions (because the rate of contribution is determined politically on a short-run basis) nor has it defined benefits in the Feldstein-sense (because pensions are also determined politically on a short-run basis). The reason for this undefined situation is that in this kind of pay-as-you-go system revenues and expenses must be balanced in the short run, and the

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[3] Gesetzliche Rentenversicherung (GRV).

way to achieve that end is a continuous meddling with contribution rates, pension levels, number of pensioners, number of contributors, and so on. If you want to go one step further back in the chain of causality, the political manoeuvring is a consequence of the vulnerability of the GPS regarding exogenous influences such as changes in the age structure of population, business cycles, and the desire to redistribute incomes (Glismann, Horn 1997).

The main quality of a funded social-security system is individual retirement accounts (Feldstein 1996). Everyone participating in the system hands (part of) his savings over to a financial intermediary; this assures him of his property and, under normal circumstances, of positive returns on his savings accounts. Important to note that these contracts with financial intermediaries do not include any kind of insurance, be it insurance of life, or disability. The institutions in charge of handling savings and the institutions in charge of handling insurances are – at least theoretically – fundamentally different; the first one is dealing with transforming individual savings into non-individual capital accumulation, the second one is dealing with transforming individual risks into average risks.[4]

It has been shown that the existing mandatory and unfunded GPS in Germany is economically inefficient when compared with the working of the capital market. For example, in order to achieve average pension levels of 1995, as provided by the current system, contributions could have been about 40 per cent of what they actually have been (Glismann, Horn 1995). To put it differently, a 42-year old employee who paid 1 000 DM to the GPS would have achieved a pension at the age of 65 for which he would have had to pay only 337 DM on the capital market (Glismann, Horn 1997). This price differential, just like any

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[4] De facto financial markets often provide a combination of saving and insurance activities. The product mix may help the intermediaries to make profits; it is nonetheless a combination of two seperate products.

administered price differential, leads to deadweight losses. The deadweight losses arise not only on the market for social security but there are also additional static losses on the labour market and dynamic losses due to deficient growth rates in the long run (caused by deficient overall savings). A mere abolishment of GPS would make employees depend on the (more efficient) funded systems. The transformation towards such a system should not be too difficult since funded pension schemes do already exist – at the corporate level – in all countries, even in Germany. Let us first analyse how such a funded system would work, and then look into slightly modified private systems. The modification will pertain to making the whole system, or part of it, mandatory.

2. A Funded System of Social Security

A purely funded system of social security raises three problems:[5]

- Not everybody who was formerly contributing into GPS can be expected to contribute voluntarily into a funded system.
- What provisions do we need, if any, to allocate these private savings?
- Can contributors rely on such a funded system? In other words: Would the system impose additional risks on contributors when compared with the government GPS?

As regards the first point, the main reason for a mandatory regulation has been that there are always some people who do not care about saving for their old age. The problem is aggravated in most industrial countries because these provide welfare payments to those people who are in dire need due to the fact that

[5] We are not concerned here with problems of transition from unfunded to funded systems. Our focus is the funded system in being. With respect to the transformation process, quite obviously everybody who has accumulated pension claims should be rewarded adequatly. But again, this is a matter of transformation.

they cannot or will not earn (enough) money by working. The mandatory social-security contributions have thus always been aimed at minimizing the moral hazard involved.

We are dealing with a hen-and-egg problem here: Are the incentives to pay voluntarily into private-pension systems too weak because of the availability of welfare payments? Or do we need welfare payments because of the weak incentives to pay into funded pension systems? Anyway, there is reason and statistical background to believe that the majority of people are ready to care for their old age themselves instead of relying on welfare payments. There are several reasons for that assumption: Firstly, in spite of existing GPS and private-pension schemes, most people have accumulated additional and huge amounts of private wealth, in the form of bank accounts, houses, financial assets, etc. Secondly, welfare payments that constitute a large part of the moral-hazard problem are only paid after the recipient has proven that he has no personal wealth left and has no close relatives to support him. Thirdly, every past contributor into GPS will in a funded system have about 20 per cent (in Germany) of his gross income available for other purposes than GPS. It can be assumed that the ordinary citizen would be quite ready to pay at least 40 per cent of this additional income into a pension system that would put him on equal terms regarding his future pension levels. All in all it seems to be a safe assumption that the number of welfare recipients would not increase by such a transition.

As regards the rules for allocating private funds on the capital market, at first sight there is a multitude of confusing possibilities where each individual's money could go. But this is confusing only at first sight. Taking the past for a reference, the allocation of private savings in Germany has been, to say the least, conservative. Adding to this conservatism the fact that the additional savings in private-pension funds would be considered long-run investments, it can be surmised that the conservative standard portfolio decision in Germany

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would become even more conservative. In other words: The share of gamblers regarding pension funds can be expected to be close to zero. Quite different from this problem is the fact that returns on savings are as different across banks as they are different across financial assets. In this case preferences play a major role. But even if the returns on assets is different across contributors, there is no a priori reason why it should not be. As a matter of fact, since banks or other financial intermediaries function as advisors, there may come about a tendency of the rates of interests to converge across different investments.

The final point is concerned with the safety of private pension funds. There are two aspects to this problem: Firstly, it may be argued that the safety of investments will be quite low regarding the still existing alternative (unfunded GPS): Studies have shown that the real rates of return of GPS contributions in Germany will be negative over the next decades (Glismann, Horn 1997; Eitenmüller 1996; Ohsmann, Stolz 1997). In other words: The contributions to GPS will be unsafe according to the already existing law, not to speak of the almost daily introduced worsening of future input/output relationships of GPS. Secondly, it is often argued that only the government can guarantee the safety of accumulated social-security contributions. It is hard to see, however, why governments cannot guarantee social-security contributions which are paid into private pension funds, especially as many a major crisis, such as world wars or world depressions, or extremely high rates of inflation, have the governments' policies for the principle cause.

As far as institutional arrangements are concerned a funded system of social security would not need introductory institutional support by the government. If there would be a lack of financial intermediaries, it does not require a lot of imagination to forecast a rise in the number of institutions.

3. A Fully Mandatory Funded System of Social Security

It is often argued that the difference between a totally or partially mandatory funded system is only one of scale. Therefore it would suffice to just look at a fully mandatory funded system which provides the same level of pensions that the GPS did. Assuming for the moment that such a system works as efficient as the capital market, the rate of contribution in Germany could decline from some 20 per cent to some 8 per cent of the individual gross income. There are, however, problems to be solved, some of them referring to economic philosophy, some to the institutional setting.

As to the first: What is the economic rationale for a fully mandatory funded system? It cannot be the moral-hazard problem (which says that some people are unwilling or unable to contribute) because in order to account for that a partially mandatory system – which provides for some basic income only – would suffice. Indeed, there does not seem to exist any valid philosophy substantiating a fully mandatory funded system.

As to the institutional setting of a fully mandatory funded system the case seems to be more complicated than the one of a fully (i.e. private and voluntary) funded system:

(1) Who assesses the mandatory rate of contribution? It is hard to describe a mandatory system that is not controlled by society, i.e. by the government.

(2) How are the mandatory funds to be allocated? Since the individual contributor has a priori a multitude of financial opportunities, and corresponding to that a multitude of expected rates of return, it must be ensured that the degree of speculation or simple gambling is effectively restrained. Therefore, laws are necessary that provide for a reasonable policy of allocating the financial resources (portfolio selection).

(3) The regulations have to define eligible financial intermediaries. With respect to these intermediaries the German law is actually quite restrictive at present regarding investment funds and, for example, life insurances.

(4) A fully mandatory funded system cannot leave the time of exit, i.e. of retirements, to the individual contributor: The idea of a mandatory system is to ensure that every retiree has a minimum of financial means. If we deal with the real world as it is, we must consider the problem of sore losers. A mandatory system where some people are better off because they can exit earlier and/or at a higher pension causes envy with the neighbour who is forced to contribute for a longer time at a probably lower rate of return on top. Thus, a mandatory system should aim at forcing contributors to stay in work for a defined period of time.

(5) It is hard to envisage that such a system would leave a retiree the free disposal of his accumulated funds. This would contradict the inherent aim to ensure a certain amount of income to the elderly people over the rest of their lives.

(6) With respect to the possibility of bequeathing the not consumed part of the accumulated savings, there does not seem to be a major difference to a voluntary private funded system.

All in all, the fully mandatory funded system has, as points (1) to (5) show, very much in common with the existing mandatory pay-as-you-go system. It can be doubted whether such a mandatory funded system will work as efficiently as the capital market. The reason is that the government has to come up with almost as many regulations as in a PAYGO system. Thus, the rate of contribution would not be the above mentioned 8 per cent which the capital market would require; it would be higher, in the worst case as in the PAYGO system.

probably approaching the rate of that system. Correspondingly, the rates of return could also be negative over the next decades.

4. A Partially Mandatory Funded System

The main question here is whether a partially mandatory system has the same properties that a fully mandatory system has. In other words: Is the degree of coercion just a matter of scale, or are there additional discriminating factors between the two systems? Assuming that moral hazard is again the core argument for keeping the system mandatory, the contributions should in this case only provide for incomes at a subsistence level. Any contributions beyond could be left to the individual non-mandatory private arrangements. From this it follows that the most appropriate regulation would be a per-capita contribution – or more exactly: a poll-tax – which would not discriminate in any way among citizens. Thus, we should look at a two-tier system which provides for a basic social-security level, financed by a poll-tax, and a non-mandatory funded system where everybody can contribute according to his own preferences.

The institutions that seem to be necessary in such a two-tier system are the following:

(1) The non-mandatory part of the funded system would not need any specific regulations.

(2) The mandatory part of the system would be governed, by and large, by the same institutional provisions that have been outlined above for the fully mandatory system.

(3) In order to minimize the costs of bureaucracy it may be worthwhile to think about letting the revenue-offices be responsible to collect the poll-tax. A law could then make the office deliver the revenue from this tax to private financial intermediaries. The contributions of the individual citizens would

still be earmarked, so that the revenue-office is compelled to hand over the revenues to the intermediary according to the preference of the individual tax payer. Both the fully mandatory and the partially mandatory systems have one thing in common: Contributors are not free to retire at their own will. Additionally, contributors are not free to allocate the mandatory part of the funds at their will. As a matter of fact, anybody who retires early will have nonetheless to pay into the mandatory part of the system for as long as every other citizen. In other words, he will have to secure a pension-level through the funded part of the system that is well above the level that would have been necessary in a fully funded system. All in all, it can be assumed that the future rate of return on total contributions into the system will be on average higher than in a PAYGO system or any other fully mandatory system. It will be lower than in a fully funded system. Thus, measured by the outcome, it is not just a factor of scale that makes the partially mandatory system different from the fully mandatory system.

C. Scenarios for Organizing Social Security in Germany

1. Overview

The number of scenarios for reforming the German system of social security[6] or for changing it seem to abound. Most of all, there are studies contemplating the implications of funded systems and of tax-financed systems of redistribution. In the following we shall discuss two alternative mixed systems of the above described "Partially-Mandatory-Funded-System" type, which both should be superior in terms of economic efficiency. Efficiency means, firstly, that there

[6] It has been shown that the current system of social security in Germany is not a true PAYGO system because of the dominating role of policy interventions, regarding both contributions and benefits. We described the present system to be a "Discretionary Social-Security System" (cf. Glismann, Horn 1997).

should be a positive real rate of interest on savings or contributions, if not a market interest rate; secondly, the system should be free from short-run interventions by governments or parliaments in order to make possible rational expectations of each citizen regarding his retirement income. Thirdly, the system should avoid more efficiently the dependency of social security on exogenous factors existing today, such as the development of the structure of population, or economic developments (unemployment or real rates of overall economic growth).

2. Two Multi-Tier Scenarios

a. A Three-Tier System: Welfare Payments cum B4* cum B2*

The logic behind this three-tier system is that there are some old people (aged 65 or more) who had not paid (enough) contributions into the social-security system and have therefore to rely on welfare payments. It is important to note that with welfare payments the individual wealth and other incomes of the recipients as well as incomes of his closest relatives are taken into account before granting welfare payments. In other words: Recipients must first consume their personal wealth and must then rely on being supported by close relatives. Anyway, this is the way the present welfare payment system in Germany actually works. It ensures at the same time that the incentives for the employed people and the tax payers to accumulate savings for their old age are not too much distorted.

The second tier of this scenario would be a mandatory funded system which ensures every contributor of a minimum income in his old days. The level of this income is politically determined; one might argue that the level should be higher than the welfare payments of the first tier. In order not to make the level

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* B2 and B4 refer to the disposition in the table of contents.

of this basic income as well as the contributions to this basic income a matter of endless political interference, the level of basic incomes should be guaranteed by the constitution; the constitution should, for obvious reasons, at the same time make this basic income for the old people tax exempted. Since this part of the system is to be funded, there should be no redistributions involved; all contributors should pay the same amount for the second tier. The second tier is thus a system of defined contributions and undefined benefits, the latter being subject to the allocation of savings and to the market rate of interest. Of course, as opposed to the welfare payments, personal wealth as well as incomes of close relatives are of no account. Every contributor gets an individual account with a financial intermediary of his own choice.

A fully funded system would be the third tier. Contributions as well as expected benefits are left to the individual. There are no compulsory payments. This part of the system works completely through the capital market. Therefore this is the only one of the three tiers can be considered efficient.

b. A Two-Tier System: Basic Incomes cum B2

Another possibility of constructing social security in a relatively efficient way is to abolish welfare payments for the old people. Instead, the suggestion of Miegel and others is picked up, according to which every old person, no matter whether insured or not, no matter whether a tax-payer or a contributor into any old-age system and independent from individual wealth and incomes, receives a basic income starting at the age of 65 (Miegel, Wahl 1985). This basic income will be defined as a percentage of the current nominal national income per capita. In order to avoid the meddling of politicians and parliaments with the basic income level for the old, this level should be guaranteed by the constitution; the constitution should also provide for tax-exemptions at the same level in the income-tax schedule. One may define the basic income as a brazen subsistence

level not to be touched upon by government. The basic income will be financed through taxes; individual wealth and other incomes and incomes of relatives will not matter. The main argument that has been put forward against such a basic income system for the old has been that such a system distorts incentives and makes the average citizen lazy. It is interesting to note that the argument comes mainly from fellow travellers of the current GPS; nonetheless, of course, it is a major and economically feasible argument. However, the citizen that serves as a model here is one that is content with having a low level of income, with having the same income as all the other old people, that has no special desires and no special incentives to increase his own well-being. In other words, the model citizen seems to be the citizen who would rely on welfare payments rather than have command of his own life. Experience tells us that such a citizen represents not the average but is rather a rare exception. Besides that, the current GPS-system which provides no incentives at all to do anything beyond paying the current mandatory contributions does not prevent the average citizen from saving and investing. The main question rather seems to be, whether such a basic income system will not be too expensive for the tax payer, since all the old people, without exception, receive the specified income. This is an empirical question (see below).

The second tier of this scenario is the above mentioned fully funded system. All things that have been said above apply here.

c. Some Empirical Observations

In the following we shall be dealing with future developments. In order to keep the content of personal opinion in the forecast as low as possible, the statistics presented rely mainly on forecasts of the German Statistical Office, Wiesbaden (with respect to the population statistics), and they rely on the forecasts of Prognos AG (regarding the social-security system up to the year 2040).

In **Table 1** the number of clients receiving welfare payments has been calculated by assuming that the share of welfare recipients aged 65 and older in total population will not change over the next 50 years. The only variable that changes is gross population. Table 1 shows that the number of welfare recipients increases over the next 45 years by a good 50 per cent.[7] The mandatory part is only concerned with those who actually paid contributions into the GPS.

With respect to the number of clients of the funded pensions in scenario 1 the number of welfare recipients in each year has been subtracted from the number of clients regarding the mandatory part of providing basic incomes. It is thereby assumed that the number of people who are unwilling or unable to be part of GPS is equal the number of people who are part of GPS but have no desire or no ability to care for an additional voluntary private saving for old age.

It is also assumed that the absolute amount of health insurance is the same for all people that are 65 and older. For example, every welfare recipient will – in addi-tion to the maximum of welfare payments (1 204 DM) – be ascribed 296 DM, which is to cover health insurance (paid by the government). This amount is independent from past "performance" and from gender.[8]

The results regarding scenario 1 are shown in Table 1. All in all, total yearly social-security expenditures in 1995 would have amounted to 319 Bill.DM.

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[7] Regarding the future development of population in Germany the first of three variants calculated by the Statistical Office has been taken. This is the variant with the lowest rate of net immigration. The reason for doing this is that the rate of unemployment is high regarding immigrants and thus the share of those who contribute to the social-security system is low. Since we operate in Tables 1 and 2 with constant shares of welfare recipients as well as of tax payers and contributors into the social-security system, the first variant would prevent us to be overly optimistic regarding contributions and revenues.

[8] The same amount was paid by the "typical" member of the GPS in 1995; in this latter case the recipient of a basic income pays only 50 per cent of the total health-care contribution, the other part is paid by the GPS institution (as regards the 296 DM: this is the amount of money paid into the health insurance by an average employee who has worked 45 years and has contributed in every year the average yearly contribution of all members).

Table 1 – The Statistics of Scenario 1: A Ballpark Estimate (at prices of 1995)

Tier	Number of Clients (000)				Payments Per Capita (DM) Per Month				Total Yearly Social Security Expenditures (Billion DM)			
	1995	2015	2030	2040	1995	2015[e]	2030[e]	2040[e]	1995	2015	2030	2040
1. Welfare Payments	746	956	1 134	1 137	1 500.–[d]	2 273.–[d]	3 105.–[d]	3 822.–[d]	13.4	26.4	42.0	51.6
2. Basic Incomes (mandatory contributions to a funded system)	7 643[a]	9 788[a]	11 619[a]	11 646[a]	1 750.–	2 652.–	3 622.–	4 459.–	160.5	312.0	505.2	622.8
3. Funded Pensions[b,c]	6 897	8 832	10 485	10 509	1 750.–	2 652.–	3 622.–	4 459.–	144.8	280.8	456.0	562.8
4. Total	—	—	—	—	—	—	—	—	318.7	619.2	1 003.2	1 237.2
5. As % of GDP									9.2	11.1	13.3	14.3

[a] Share of contributors to GPS in the population between 15 and 65 years, multiplied by the number of people aged 65 and more. – [b] Excluding those people who were not part of GPS. – [c] Guesstimate (cf. Text). – [d] Maximum amount, including health insurance (paid by government; cf. text); wealth and incomes of close relatives would effect a reduction in welfare payments. – [e] Assessed Growth Rate: 2,1 % (upper variant of Eckerle et al.).

Source: Statistisches Bundesamt, Wirtschaft und Statistik, Heft 7/94. – Eckerle et al. 1995. – Own calculations.

This is by and large what was paid out by the GPS system in 1995. However, it must be remembered that in the first tier the number of clients is only 15 per cent of total welfare recipients, which indicates that some 85 per cent of welfare recipients are of an age below 65 years. Similar reasoning applies to the second tier (basic incomes), where only 38 per cent of GPS recipients are included (due to the fact that the total number of recipients is blurred by people who receive more than just one pension and by the fact that the average contributor retires at the age of 59/60 years). All in all, total yearly social-security expenditures in scenario 1 would be a little more than 9 per cent in 1995; this share in GDP will increase over the next 45 years to a level of 14 per cent of GDP. For comparison: Prognos forecasts a share of GPS of about 22 per cent in the year 2040 (Eckerle et al., p. 9)

In scenario 2, as has been discussed above, there do not exist any welfare payments to people aged 65 and older; instead the basic income system applies to all. Quite evidently, the total burden to the tax payer is much greater than in scenario 1, due to the fact that everybody receives a tax-financed basic income once he is 65 or older. The voluntary part of scenario 2 is somewhat higher than in scenario 1 because the number of clients is greater (including civil servants and part of the self-employed farmers). All in all, the total burden is higher than in scenario 1 in every year considered. It has to be remembered that the burden can be easily adjusted to any level by just scaling down the level of basic incomes.

3. Economic Implications of the Two Scenarios

It is certainly true that any quantitative assessment of the effects of the two scenarios described above can only be precisely wrong; however, they can certainly be vaguely right. In other words, one can be quite certain that the direction of the economic implications of the two scenarios, when compared with the

Table 2 – The Statistics of Scenario 2: A Ballpark Estimate (at prices of 1995)

Tier	Number of Clients (000)				Payments Per Capita (DM) Per Month				Total Yearly Social Security Expenditures (Billion DM)			
	1995	2015	2030	2040	1995	2015[a]	2030[a]	2040[a]	1995	2015	2030	2040
1. Basic Incomes (tax-financed)	12 686	16 246	19 285	19 331	1 750.–	2 652.–	3 622.–	4 459.–	266.4	517.0	838.2	1 034.4
2. Funded Pensions	7 599	9 731	11 552	11 579	1 750.–	2 652.–	3 622.–	4 459.–	159.6	309.7	502.1	619.6
4. Total	—	—	—	—	—	—	—	—	426.0	826.7	1 340.3	1 654.–
5. As % of GDP									12.3	14.9	18.5	19.1

[a] Assessed Growth Rate: 2,1 % (upper variant of Eckerle et al.).

Source: Cf. Table 1; Sources as in Table 1. – Own calculations.

existing GPS system, can be correctly assessed. The exact amount of changes in the social product, in the rate of growth, or in investment and employment are probably even less precise than the ball-park estimates of the scenarios in Table 1 and **Table 2**.

The macroeconomic effects of the two scenarios are shown in **Table 3**. The system of reference is the existing one in 1995, which is a combination of GPS, government officials' pensions, farmers' pensions, welfare payments and many more of other governmental schemes. We concentrate on the effects on savings, investments, employment and growth. It is assumed that there is no disequilibrium regarding savings and investments, we take account of the existing disequilibrium on the labour market (9.4 per cent rate of unemployment). With respect to scenario 1, the assumptions are the following: The additional savings consist of contributions to the purely funded part and of 60 per cent of the contributions to the basic-incomes part. The reason for the latter is that although the system is based on the capital market, it is nonetheless mandatory. We suggest that the mandatory part is less efficient than the voluntary part and therefore only take 60 per cent of the contributions to be additional savings. As regards scenario 2, considering the above discussion, we suggest that all contributions to the funded system are net additions to savings.

Table 3 – Macroeconomic Effects of Scenarios 1 and 2 in Germany
– A Model for the Base Year 1995 –

Indicator		Change			
		Scenario 1		Scenario 2	
		1995	2040	1995	2040
1. Savings ≡ Investment (Bill.DM)[a]		379	818	61	132
2. GDP (capital productivity: 0.25; Bill.DM)[a]		95	204	15	33
3. Employment (1 000)	max.	719	pos.	116	pos.
	min.	72	pos.	12	pos.
4. GDP-Growth[a] (% per annum)		0.6	0.6	0.2	0.2

[a] At prices of 1995.

Source: Tables 1 and 2. – Heitger (1997). – Own calculations.

Since both scenarios have in common the funded part of each system, the change from GPS to this funded system incorporates a change from a transfer system to a savings/investment system. In other words, the yearly amount of voluntary savings that will be channelled through the capital markets will increase by an amount that can be calculated from superannuated contributions based on the pension levels shown for tiers 2 and 3 in Table 1, and for tier 2 in Table 2. Insofar it could be argued that total private savings would increase in scenario 1 by 379 Bill.DM and in scenario 2 by 61 Bill.DM in the base year 1995 (Table 3).

Two final remarks seem to be necessary:

In both scenarios the former contributors to the GPS would no longer have to contribute; the net effect of additional taxes and cessation of contributions will leave a considerable net-income increase to the former GPS-members. It can be assumed that some people will spend the major part of their net savings for contributing into a funded social-security scheme. [9]

- With respect to scenario 2 a large part of expenditures for the old people is already paid from taxes at present. Among the beneficiaries are government officials, welfare recipients, and old farmers; additionally, the tax support to the GPS has to be mentioned. Our best guess would be that by and large

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[9] There are balancing effects with respect to savings as well. The voluntary savings in scenario 2 will probably not increase total savings of the economy by the same amount. This is due to the fact that the basic income in scenario 2 will guarantee the level of subsistence also for all those people who have never been part of the GPS. It can be surmised that the savings of this group of people, that hitherto had been done for their old age, will decrease. In addition, all those contributors that are married will receive under the basic income system of scenario 2 a household-income – once they both will have reached the age of 65 – that will probably be significantly higher than their GPS-income would have been (this holds at least for a large part of those marriages where only part was contributing, or where the contributions of the other one were significantly below those of the main contributor). This group of people will also cut their savings. The negative effect on total savings is aggravated by the change in the tax structure: The two groups that will cut their savings will have to pay additional taxes in order to finance the basic income-system.

150 Bill.DM are of this kind. Again looking at Table 2, the marginal raise in taxes for financing a basic-income system is only one third of the figures shown in the columns of total security expenditures. The adjusted total security expenditures would then be some 8 per cent of GDP instead of the 12.3 per cent as shown in Table 2 for the year of 1995.

D. Should Contributions be Taxed, or Benefits, or Both?

Without going deeply into the theory of public finance it can be said that a tax system should try not to tax economic growth more than absolutely necessary. In addition, taxes should not discriminate more than necessary among activities, and costs of administration should be kept as low as possible. Considering this, there are two basic options regarding taxation in a funded social-security system:

- The accumulation of capital as well as interests paid on that capital remain untaxed until the period of accumulation is over and pensions are paid to retirees. Again, there are two possibilities of taxation:

  - The total accumulated capital stock is subject to an indemnity tax (which is raised but once). From then on pensions will not be burdened again by income taxes. A minor problem arises here because after taxation by the indemnity tax further interest payments will accrue the remaining capital stock. This problem can be effectively dealt with by fixing the rate of the indemnity tax appropriately.

  - The pensions are taxed on a current basis according to the income-tax schedules. The administrative problem that arises in this case is that the retiree must be prevented from transferring part of his social-security capital to other locations and thereby prevent current income taxes by artificially reducing his pension level. Similar problems arise in all those

cases where the retiree dies relatively early. In that case there exists the possibility that the remaining capital stock will not be "adequately" taxed.

- All savings for social security stem from after-tax incomes. From this it would follow that future repayments in the form of pensions would be totally tax-free. Only interests on the capital stock are subject to income taxation. In order to keep the system simple, it can be argued that interest payments should not be taxed until the end of the period of accumulation, i.e. until retirement. Then we have the same situation with respect to returns to capital that was discussed in the previous case.

The main result regarding a funded social-security system would be that in both cases an indemnity tax should be superior with respect to keeping the costs of administration low and the whole system simple.

With respect to the two scenarios presented above, things are a bit more complicated because the funded system is only part of each scenario. In the first scenario the welfare payments for the old people are by definition tax-free; the welfare payments are financed by taxes. As regards the second tier of scenario 1, the mandatory absolute payments for old age, this is meant to secure a certain level of subsistence. It can be argued that all contributions, since they are the same for everybody, as well as the returns on the savings and the pensions paid for retirees should be tax-free. As to the third tier: see above.

There are no fundamentally different tax implications regarding scenario 2. The tax-financed basic income is by definition to be kept tax-free, just like the welfare payments of scenario 1. The funded part of the system was discussed above.

Literature

Eckerle, K., M. Schlesinger, and G. Blaha (1995). Prognos-Gutachten: Perspektiven der gesetzlichen Rentenversicherung für Gesamtdeutschland vor dem Hintergrund veränderter politischer und ökonomischer Rahmenbedingungen. Basel.

Edey, M., and J. Simon (1996). Australia's Retirement Income System: Implications for Saving and Capital Markets. Paper presented at the "Privatizing Social Security Conference", August 1–2, Cambridge, MA.

Edwards, S. (1996). The Chilean Pension Reform: A Pioneering Program. NBER Working Paper 5811, National Bureau of Economic Research, Cambridge, MA.

Edwards, S. (1997). Chile: Radical Change Towards a Funded Pension System. Paper presented at the "Kiel Week Conference", June 26–27, 1997.

Eitenmüller, S. (1996). Die Rentabilität der gesetzlichen Rentenversicherung – Kapitalmarktanaloge Renditeberechnungen für die nahe und ferne Zukunft. *Deutsche Rentenversicherung*: 784–798.

Feldstein, M. (1996). The Missing Piece in Policy Analysis: Social Security Reform. *The American Economic Review, Papers and Proceedings* (86): 1–14.

Glismann, H.H., and E.-J. Horn (1996). Zur Reform des deutschen Systems der Alterssicherung. Kiel Working Paper 767. Institut für Weltwirtschaft, Kiel.

Glismann, H.H., and E.-J. Horn (1997). Alterssicherung in Deutschland: Primat des Interventionismus? *Ordo Jahrbuch für die Ordnung von Wirtschaft und Gesellschaft* (48). To be published.

Heitger, B. (1997). *Wachstums- und Beschäftigungswirkungen der Rückführung öffentlicher Ausgaben – differenziert nach Arten. Eine internationale Analyse.* Kieler Studie (to be published).

Miegel, M., and S. Wahl (1985). Gesetzliche Grundsicherung, Private Vorsorge – Der Weg aus der Rentenkrise. Bonn.

Neumann, M. (1997). Vom Umlageverfahren zum Kapitaldeckungsverfahren: Optionen zur Reform der Alterssicherung. *Rentenkrise. Und wie wir sie meistern können.* Frankfurter Institut, Kleine Standbibliothek (21): 87–128.

Ohsmann, S., and U. Stolz (1997). Beitragszahlungen haben sich gelohnt. Betrachtungen zur Rendite der Altersrenten in der gesetzlichen Rentenversicherung. *DAngVers* (3): 119–124.

Prognos AG (1995). Cf. Eckerle, K. u.a.