Old-age-security reform in Poland.
Reasons for the successful partial capitalization

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Abstract

The Polish pension reform in 1999 as an example for a successful transition from an unfunded to a partially capitalized pension system is described and analyzed in order to point out the reasons for this success. The author emphasizes that lower contribution rates for the unfunded layer and an efficient regulation were essential for this success. Whether all the aims can really be achieved is nevertheless an open question because this depends on the political decision-making in future. This is the reason why further monitoring is necessary to evaluate the reform.

JEL: H 55

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I. Introduction

It is more and more obvious that European countries are aging societies. This is due to longer life expectancy and lower fertility rates all over Europe. World Bank statistics show what old-age ratios are expected for the next 40 years. Figure 1 indicates that the ratio of people over 60 years to the total population will rise significantly from about 20% nowadays up to 39% in Italy in 2040. It is predicted that e.g. the ratio of people over 60 to people between 20 and 59 years will be about one to one in countries like Germany, Italy, Spain and Japan in 2040. Not only in OECD countries but also in Latin American and Eastern European countries, one can observe this trend.

This demographic development has numerous effects on the economy of each of these countries. In this paper, I want to focus on the effects on the social security system and in particular on the (public) old-age pension schemes. In all of these countries cited above, there are so-called Pay-As-You-Go (PAYG)-pension schemes. This means that working people pay into this system and retired people receive this money without having built up an individual capital stock. When working people get retired, they will also receive money out of this pension system paid in by younger working people. Thus, there is no capital accumulation within a PAYG-system, but the revenues are spent immediately.

Figure 1: Old-Age ratio (in % of population)
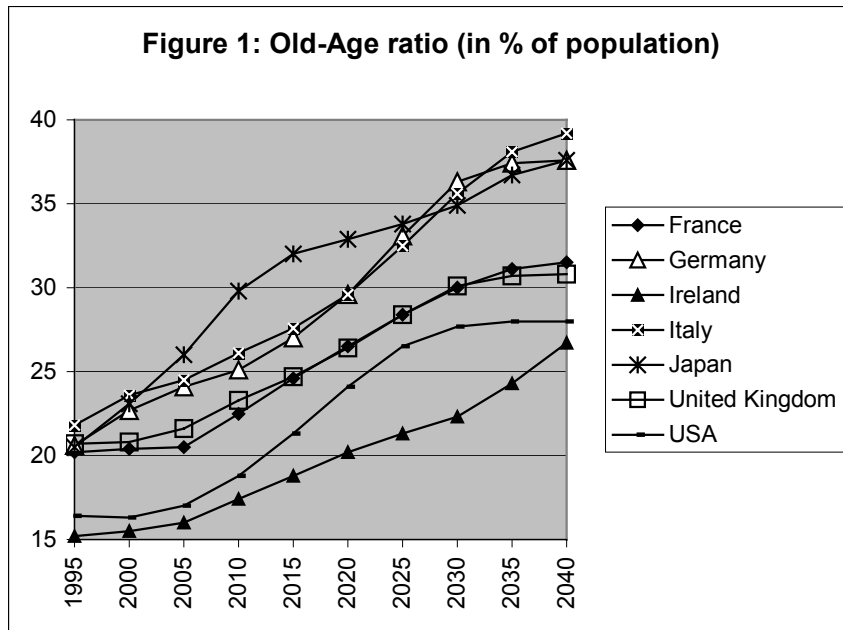
Source: World Bank, in: http://www.worldbank.org.

If we recall the fact that the number of young working people will diminish relative to old-age people, then the problem arises that working generations will have to spend more and more for the growing number of pensioners than the generations before them.[1] This is ceteris paribus only possible by raising taxes or contribution rates. However, contribution rates today are already quite high in comparison with the 1960's and 1970's and no-one desires to raise them beyond current high levels. In 1995, most OECD-countries already spent at least 10% of the GDP only for public pensions, in countries like Austria and Italy even 15% of the GDP (see figure 2). Very often, tax or contribution rates are much higher than these percentages because the tax base is often smaller than the GDP. Usually, gross wages are used to calculate contribution or tax rates for public pension schemes.

In this situation, further increases of contribution rates due to the demographic development will not be accepted by young voters. On the other hand, pensioners will oppose pension cuts because the public pension is often the only source of income for them. Besides, public pensions are often regarded as their property since they have paid for them all the time when they were young. Having in mind

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[1] Diminishing retirement ages through early retirement programmes, high unemployment rates and longer periods of education also contribute to the fact that a lower number of contributors must finance a growing number of pensioners.

this difficult situation, politicians in European countries react in a very different manner.

Table 2: Expenditures for Public Pensions in % of GDP
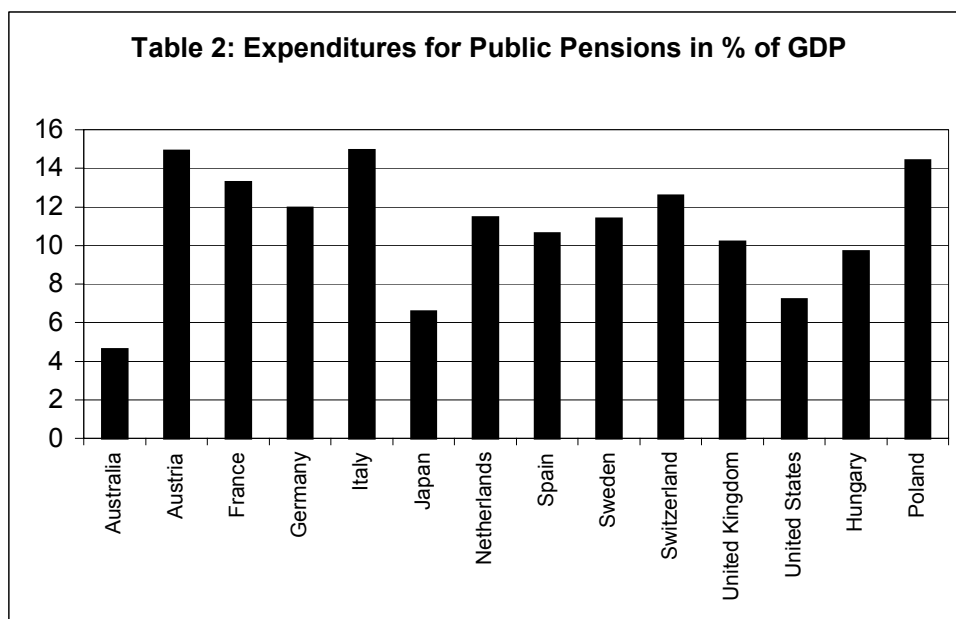
Source: OECD Social Expenditure Database 1998.

On the one hand, there are rationalizers who try to cut down benefits from existing PAYG-systems slightly but permanently. Politicians want the pensioners to work longer before getting retired, or they propose to cut down pensions, to raise contribution rates slightly, to finance deficits in public pension systems out of general tax yield, to force people to save more for the old-age or a combination of all of these proposals. On the other hand, there are reformers who want to abolish the current PAYG-system in order to introduce a new one which is based on three layers: the first layer is a much smaller defined contribution PAYG system, the second is an obligatory fully funded layer and the third is a voluntary funded layer.

These reformers were successful in Poland and other Eastern European countries (partly also in Sweden[2]) where new pension schemes were introduced in 1998/1999 whereas countries like France or Spain are run by rationalizers who do not want to change the system.

In this paper, I try to describe the details of the pension reforms in Poland within the second chapter and their expected economic effects in the third chapter. I do not want to focus on the changes in the Polish social law, but what is really important also for other countries is the way how the Polish reformers managed to

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[2] For more details see Sundén for the Swedish reform (1998) and for Eastern European countries, see Mueller, K. and Wegener (1999) or Schmaehl and Horstmann (2002).

implement the partial capitalization of the old-age security scheme by softening the disadvantages of capitalization through political regulations. In the end, I will try to evaluate the reform and to make an outlook into the future.

II. Public Pension Reform in Poland[3]

In order to understand the Polish pension reform, one has to consider the situation of the old public pension scheme before 1999. This is done in section 2.1. The development of the old system can explain why the reformers managed to build a new system in Poland and not elsewhere. In section 2.2, I will describe the most important features of the new system.

II.1 The old Polish Public Pension System

Since the beginning of the communist era, there has been a defined benefit PAYG-public pension scheme which was part of the state-owned Polish Social Insurance Institute (ZUS). Until 1981, contribution rates were low. For the whole system, including retirement, sickness, disability and health care, employers had to pay 25% of employee's gross wages to the ZUS. Employees did not pay at all. Benefits were related to the best-paid ten years of the last 19 years of employment. There were, however, many privileged sub-systems for certain professions, e.g. for coal miners, farmers, railway workers, soldiers, policemen, "state protection" officers and so on. Due to the economic crisis after 1981, the state of the ZUS aggravated more and more so that contribution rates for the employers had to rise up to 38% in 1989.[4]

After the collapse of the communist system, Poland entered into the transition from a closed COMECON-economy into an open economy integrated into the capitalist world markets. This transition was characterized by high unemployment rates because Polish enterprises lost most of their markets in Eastern Europe and increased competition from Western countries reduced turnover and profits. Many state-owned enterprises could not be subsidized any more because of high public debt which was already accumulated during the communist era. This also contributed to massive lay-offs. As a result, official unemployment rates in 1993 were at 16.4%. This unfavourable development had severe repercussions on the Social Security System because former employers of now unemployed people did not pay any more. Simultaneously, Polish politicians wanted to reduce high unemployment rates by granting early-retirement pensions for unemployed older people and by making it easier to get disability pensions. Polish politicians also made expensive promises for old-age people in order to win elections. Thus, not only the number of contributors fell from 14.5 millions in 1989 to 12.5 millions in 1994 but also the number of new entrants per year to the Polish pension system grew from 150,000 in 1989 to 500,000 in 1991. Furthermore, the pensions in 1996

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[3] The Polish pension reform is broadly described by Gora/Rutkowski (1998, 2000) and Chlón (1999).
[4] See Zukowski (1995) for further details on the Polish Security System after 1945.
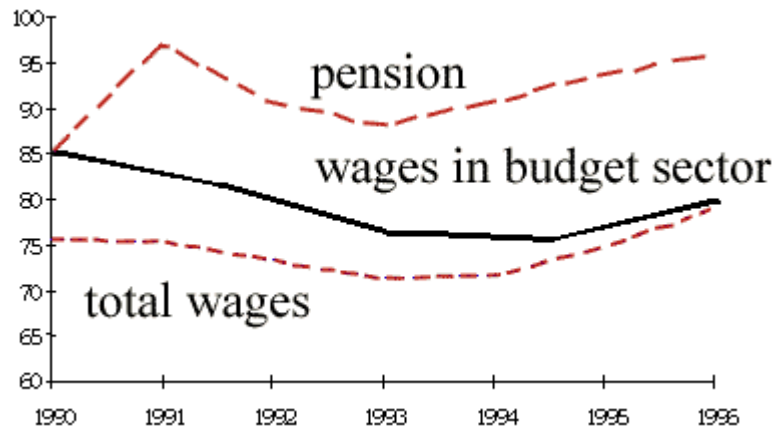
were at 95% of the 1989 level whereas the average real wages fell to 80% of the 1989 level (see Figure 3a,3b,3c). Moreover, the average retirement age decreased to 55 for women and 59 for men.[5]

Figure 3a: Number of new entrants to the Polish pension system, 1985-1996 (thousands)
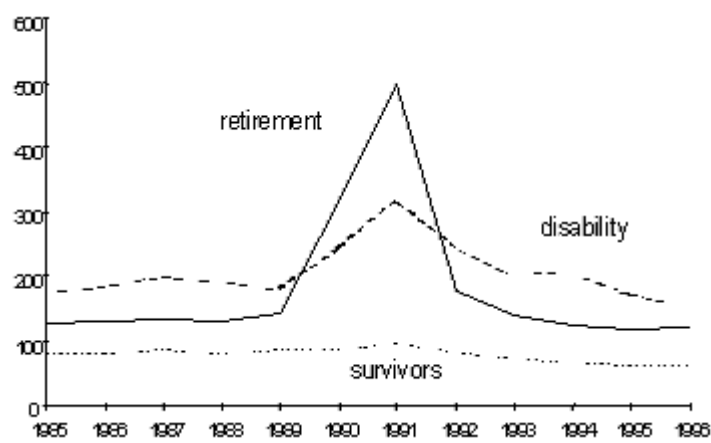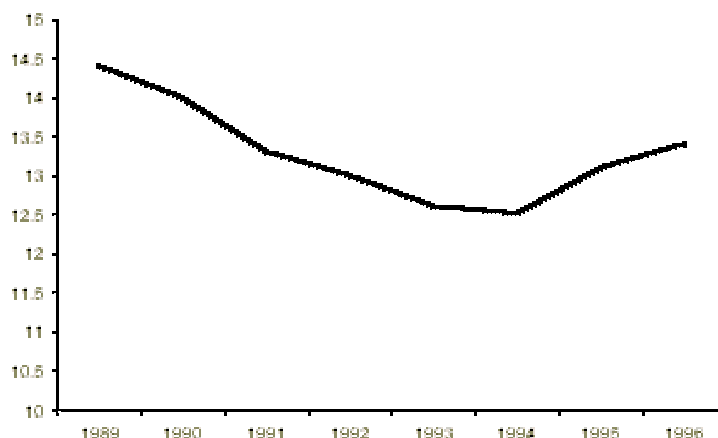

Source: Gora/Rutkowski (1998)

Figure 3b: Number of contributors in Poland, 1989-1996 (millions)

Source: Gora/Rutkowski (1998)

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[5] According to the statistics of the ZUS, quoted from Góra/Rutkowski (1998, pp.3-5.)

Figure 3c: Real pensions and real wages in Poland, 1990-1996 (1989=100)

Source: Gora/Rutkowski (1998)

The effects of all these measures on the Social Security System were disastrous. The contribution rates for the employers increased to 45% of gross wages in 1998, 24% for retirement pensions alone. Expenditure for retirement and disability pensions increased to 15.4% of Polish GDP in 1994. Polish politicians had to subsidize the pension system by transferring tax yield to the social security system in order to prevent further increases of contribution rates. According to Lodahl and Schroten (1998, p. 276), tax subsidies to the amount of 6.1% of the GDP were necessary. But as deficit spending became larger and larger, politicians were forced to cut pension levels in spite of enormous protests. The public pension scheme became more and more unpopular within the Polish population. Demographic estimates further cast doubts on the reliability of the old Polish PAYG-pension scheme. World Bank statistics[6] indicate that in Poland, the ratio of people between 20 and 59 to those older than 59 will fall dramatically from 3.4 in 1995 to 1.8 in 2040. This would have meant additional financial problems in future. By 2050, projected spending only for pensions would have been 27% of GDP. Under these circumstances, opposition against a fundamental reform became continuously weaker so that the new pension system could start on April 1st, 1999. The reform, however, only changed the Polish old-age pension system. Disability pensions and survivor benefits remained unchanged.

II.2 The new Polish Old-Age Pension System
The new Polish Pension System does not eliminate totally the old pension system. Instead, it is added to the old system. In the old unchanged pension system, all current pensioners and the contributors who were born before January 1st, 1949

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[6] See for example http://www.worldbank.org.

have to remain. That means that the old system ceases to exist only when the last member who was born before 1949 dies. Additionally, there are three different layers which are accompanied by a tax-financed minimum pension. The first layer is an obligatory PAYG-pension scheme, the second layer is an obligatory capitalized pension scheme and the third layer is a voluntary capitalized pension scheme. Before the analysis of the reform, I will first describe the new features of each of the layers.

II.2.1. The first layer

Older employees and all current pensioners must stay in the old Polish Pension system where nothing changes (except for the decrease of contribution rates). The membership in the first layer is obligatory only for self-employed, freelancers and employees and their employers who were born after January 1st, 1949.

The first layer is a defined contribution PAYG-pension scheme with a contribution rate of 12.2%. Employers and employees each pay half the contribution rate, whilst the employee did not pay anything before 1999. Real wage losses, however, were compensated by higher gross wages paid by the employers so that net income and labour costs did not change with the sharing of the contributions at the beginning. There exists an upper limit for the calculation of the contributions for the first layer to the amount of 250% of the average gross wage and a minimum limit to the amount of the minimum wage for employees.[7] Not only employees, employers, freelancers and self-employed but also the taxpayer pays into this first layer in case of unemployment, maternity and nursing. Chlon (1998, p. 20) estimated that these costs will not exceed 0.3% of the GDP.

As the first layer is a PAYG-pension scheme, all the contributions are immediately paid out to the current pensioners. In the years from 2000 to 2008, in addition to 12.2% of the gross labour income, the contributors have to pay 1% of the gross wage into a buffer fund. The revenues are not spent immediately but are invested on the capital markets. But in contrast to the capitalized second layer, which will be described later on, this capitalization of the first layer shall be only temporary because the intention is to deplete the buffer fund from 2020 on when the old-age ratio will have increased considerably. The underlying aim is to prevent high increases of the contribution rates in future.

Another difference to the old PAYG-pension scheme before 1999 is that the accrued benefits are no longer defined. Instead, the first layer is a so-called defined contribution (DC) scheme where the benefits are calculated as follows: Each of the contributors gets a fictitious individual account. His or her contributions are noted on this account. As if one had paid into a banking account, the amount of paid contributions yields interest on this fictitious individual account. The interest is

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[7] For freelancers and self-employed, the minimum limit is at 60% of their average income.

equal to 75% of the annual change of the national wage sum[8]. All the contributions and the "interest yield" is accumulated on this account until the age of retirement (for men at least at the age of 65, for women at least at the age of 60). From this age on, each person can decide whether or not he or she wants to retire. At the age of retirement, the actual balance of the fictitious individual account is divided by the average remaining life expectancy[9] in months in order to calculate the monthly pension. It is indexed to the consumer price index plus 20% of the real wage increases. This pension is paid until death. If a person dies earlier than the average, the remaining balance on the fictitious individual account is lost, as survivor benefits are financed by another independent PAYG-scheme.

This means that there are no longer defined benefits because benefits vary with the retirement age which can be chosen deliberately by the employee and vary with the remaining average life expectancy at the moment of retirement. However, the minimum retirement age is 60 for women and 65 for men. The level of benefits strictly depends on the amount of contributions which were paid earlier and which are noted on the account.

These accounts are fictitious because in reality, these accounts are empty as everything is paid out to the current pensioners. They only serve to determine the accrued rights transparently.

II.2.2. The second layer

The second layer is fully funded. Employees, self-employed and freelancers pay 7.3% of the gross labour income to the ZUS which transfers this money to a private pension fund chosen by the employee. Employees who were born before January 1st,1949, are not allowed to take part in this second layer. They have to stay in the old Polish pension system. Employees born between January 1st,1949 and January 1st,1969 can choose whether or not they want to pay in a private fund. If not, they pay the same amount of money into the reformed first unfunded layer. Employees born after January 1st,1969, have to take part in the second layer and have to choose one fund. In the end of 1999, there were 21 licensed pension funds which could be selected by the participants of the second layer (see table 1). The three biggest pension funds in Poland controlled 67.6% of the total market, the biggest five even 79.8%. This high market concentration leads to a high influence of only a few pension fund managers on the capital market. On the other hand, the insured have the right to change the pension fund so that these results may be only temporary. Recent statistics from the Insurance and Pension Funds Supervisory Commission (KNUiFE) reveal that after the third quarter of 2002, 17 pension funds

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[8] The national wage sum is defined as the average labour income times the number of working people.

[9] The average is calculated on the national level although men have a shorter life expectancy than women. In order to avoid lower pensions for women because of their higher life expectancy, politicians voted for this kind of redistribution between men and women.

were still existing and that the market concentration was nearly unchanged (see table 2).

TABLE 1: Market shares of the pension funds in 1999

	Accumulated Capital in Mill. Zloty	Market Share	Insured Persons
Commercial Union	678,9	30,23%	2.300.000
Nationale Nederlanden	478,2	21,29%	1.600.000
Zlota Jesieñ – PZU	360,2	16,04%	1.900.000
AIG	178,6	7,95%	850.000
Zurich Solidarni	96,9	4,31%	455.000
Norwich Union	75,5	3,36%	565.000
Bankowy	74,9	3,33%	390.000
Skarbiec- Emerytura	58,1	2,59%	390.000
Winterthur	50,7	2,26%	300.000
Ego	34,4	1,53%	286.000
Orzel	32,3	1,44%	328.000
Dom	31,8	1,42%	250.000
Allianz	30,5	1,36%	197.000
Pocztylion	27,9	1,24%	393.000
Pioneer	13,9	0,62%	150.000
Pekao Alliance	10,0	0,45%	70.000
Arka-Invesco	5,2	0,23%	80.000
Epoka	3,2	0,14%	100.000
Polsat	2,9	0,13%	160.000
Kredyt Bank	1,6	0,07%	90.000
Rodzina	0,2	0,01%	75.000
TOTAL	2245,9	100,00%	10.929.000

Source: Daily Newspaper Polityka, No.7 (2232), February 12th,2000.

When the contributors wish to retire at least at the legal minimum retirement age which is also valid for the second layer, the chosen fund has to pay lifelong annuities which must be indexed at least to the consumer price index so that the pensioners get simultaneously an unfunded pension out of the first layer and a funded pension out of the second layer. Again, benefits are not defined because they depend on the value and the earned interest rates of the assets as well as the administrative costs of the respective pension fund. The administrative costs can be divided into the fixed fees and the variable fees. The fixed fees are regulated and supervised by the KNUiFE. The fixed monthly fees must not exceed 0.05% of the accumulated capital of the respective pension fund.

TABLE 2: Market Shares of the pension funds in September 2002

	Accumulated Capital (in Million Zloty)	Market Share	Insured Persons
Commercial Union	7925,1	28,78%	2.493.255
Nationale Nederlanden	6057,3	22,00%	1.821.157
Zlota Jesienj – PZU	3887,6	14,12%	1.795.886
AIG	2364,1	8,58%	869.944
Zurich Solidarni	934,1	3,39%	399.641
Bankowy	849,4	3,08%	406.638
Sampo	803,2	2,92%	453.949
Allianz	734,8	2,67%	239.572
Credit Suisse	669,9	2,43%	374.213
Skarbiec- Emerytura	657,1	2,39%	424.365
Pocztylion	569,5	2,07%	487.114
Dom	480,4	1,74%	274.653
Pekao	459,4	1,67%	301.207
Ergo Hestia	445,3	1,62%	391.209
Ego	391,4	1,42%	257.793
Kredyt Bank	197,2	0,72%	190.615
Polsat	111,8	0,41%	168.757
TOTAL	27537,6	100,00%	11.349.968

*Source:*http://www.knuife.gov.pl/publikacje/emerytalny/biulkw/kwartalnik0302.pdf

The variable unregulated monthly fees lie between 6% and 10% of the monthly contributions per capita. The longer the insurance contract lasts, the smaller the variable fees so that after 20 years, the variable monthly fees range from 2.5% to 9% of the monthly contributions.

Pension funds are highly regulated and monitored by the KNUiFE because the public sector guarantees part of the accrued benefits. There are several minimum conditions for insurance companies concerning for example the capitalization and

their independence from other companies. In addition, there are clear limits of investment. Up to 40% of the capital can be invested in quoted stock, up to 5% in foreign shares, up to 10% in National Bank papers and up to 15% in municipality bonds. Pension funds cannot hold more than 5% of their assets in the securities of one single issuer. In reality, pension funds do not invest up to these limits but their portfolios consist of quoted stocks only up to 25.3% in Sept 2002, as it can be seen in figure 4.

Figure 4: Diversification of the Pension Funds' Portfolios (Sept. 2002)

Source: http://www.knuife.gov.pl/publikacje/emerytalny/biulkw/kwartalnik0302.pdf
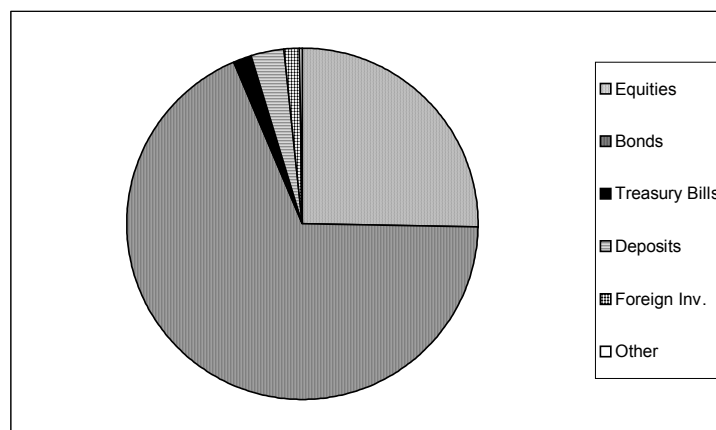
A fund's assets must be held by a bank with no capital affiliation with the pension fund. The supervisory commission reports that in September 2002, assets with a value of 27537 million zloty=6657 million € were already accumulated.

Every pension fund must have a rate of return equal to or above the growth rate of the consumer price index. Besides, the rate of return within a two-year-period must be at least 50% or four percentage points (whatever is higher) below the weighted average rate of return of all pension funds. If not, the company has to fill up the deficit. If it is not able to do so because the reserves are already depleted, this pension fund is declared bankrupt by the KNUiFE. The general reserve fund of all the pension funds has to fill up the deficits and the employees have to choose another fund without losing accrued rights.

II.2.3. The third layer

Finally, there is a third layer which is fully funded as well but it is totally voluntary. The third layer can comprise voluntary long-term savings plans paid only by employees but also occupational pension plans paid voluntarily by the employee and the employer. Contributions to the third layer are tax deductible. Pension funds operating in this third layer are more flexible than those operating in

the second layer because there are fewer portfolio restrictions and no minimum rate of return. Employers also have to consent with trade unions and vice versa to establish an occupational pension plan.

II.2.4. Minimum pensions

Beside the three layers, there is a guaranteed minimum pension base. Persons who reach the minimum retirement age and who have worked for at least 20 years (for women) or 25 years (for men) get a tax-financed pension subsidy so that every pensioner has at least 415 Zloty per month (i.e. 105 Euros or 30.8% of Polish monthly average gross wages in 1998). However, this minimum pension is indexed to a mixed price-wage formula with only a 20% share of wage increases. Thus, minimum pensioners hardly participate in economic progress. According to Chlon (1999, p. 35), about 15% of the pensioners will be obliged to get the aid of this minimum pension guarantee.

II.2.5. Financing of the reform

The introduction of the second layer means that employees and their employers who decide to take part in this layer as well as those employees who are obliged to do so will pay only 12.2% of their gross wages into the first layer instead of 24% before the reform. This means revenue losses for the unfunded layer so that the problem arises how to finance the pensions of the old who depend on the benefits from the unfunded layer. This problem was aggravated by the fact that only 600,000 Poles who were born between 1949 and 1969 decided not to take part in the second layer and to pay only into the unfunded layer, but 10.9 million Poles on the other hand decided to capitalize partially their pension benefits (see also table 1). This observation confirmed the trend in all Eastern European countries which underwent such a reform that many people will be inclined to pay into a funded layer instead of a PAYG-pension system.[10]

Estimates from Chlon (1999, p. 49) indicate that the additional deficit caused by the partial capitalization would be at about 1.6% of the GDP in 1999. These losses from reduced payments into the first layer shall be compensated by expenditure cuts and higher state subsidies.

Expenditure cuts are generated by the higher retirement age (but only in the long run) and the partial price indexation and the national wage sum indexation of the benefits. Estimates from Chlon (1999, p.37) show that these benefit cuts will result in lower replacement ratios for future pensioners. Whilst current pensioners receive on average 76% of the last net wage if they have worked since the age of 25 without any interruption, future pensioners who start their working carrier now can expect to get only 62% of the last net wage from the first and the second layer. Higher subsidies from the state budget are financed by lower expenditures for the uniformed services and lower sickness benefits. But the most important part stems from the privatization of Polish state enterprises (e.g. the telecommunication

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[10] See Palacios/Whitehouse (1998).

operator, state owned banks, insurance companies, power companies, airlines and so on). According to the OECD (1999), about 120 large and 3000 small enterprises are to be privatized. The estimated revenues of about 14% of the GDP[11] will be put aside into funds which will be depleted during the transition from the old to the new partially funded pension system.

III. The economic aims of the partial capitalization

The main objective of politicians was to get rid of the old Polish pension system because it was so unpopular within the population. But the new system should also avoid the flaws which were inherent in the old system so that several conditions had to be met in order to win the majority for the reform.

As funded pensions are known to be risky, risk diversification was a very important objective for politicians. Due to low payments for many pensioners, the rate of return advantage of capitalized system was also a very important objective. During the transition to a market economy, it was also important to develop and to strengthen privatized capital markets. And finally, labour market effects of the reform were also relevant, as unemployment rates were high and the old system was supposed to damage the labour market. Following sections, will deal with these objectives and will explain how the new system will serve to fulfil these aims.

III.1. Risk diversification

The main economic effect resulting from a partially capitalized public pension system is certainly the diversification of risk. The rate of return of a fully funded system depends on the financial market development. As there is often high volatility, there is often a high risk but also a risk premium. The rate of return of a non-capitalized PAYG-public pension system on the other hand depends on the demographic development, unemployment, political pressure and wage changes. By mixing these two systems, each of these risks is better diversified as the correlation is not perfectly positive. If e.g. political pressure leads to financial instability of a PAYG system and to lower benefits, this is softened by the capitalized part of the pension system which is almost independent of political pressure. Risk is also reduced by the demographic reserve fund of the first layer. The demographic risks of the unfunded layer will be lower because there is no need to increase the contribution rates if the deficit caused by the shrinking number of working people can be financed by depleting the buffer fund from the years 2020 on.

The risk of losing capitalized pension benefits through bankruptcy of a pension fund is also reduced by the strict regulation of pension funds. Regulation is necessary because of the asymmetric information problems between a principal and

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[11] Due to different uncertain factors, these estimates vary considerably, see Gesell et al. (1999, p. 437 sq.).

his agent. Here, the principal is the person who wants to be insured against the losses of income in case of retirement. The agent is the insurer who is better informed about risks, costs and rates of returns. The problem arises because the agent has other objectives than the principal. The principal's objectives are to ensure a steady and satisfying income during retirement and to be insured against the longevity risk. Fund managers, i.e. the agents, who invest the money on the capital markets may also have different objectives than the employees or the pension fund board members.[12] First, they must justify their existence by picking certain stocks, bonds or at least indices and by diversifying their products. Their strategy must also be defended easily so that there might be a bias towards popular stocks and bonds. Another effect of the easy-to-defend-strategy is the home bias because it might be more difficult to explain the investment in exotic and rather unknown foreign assets, bonds or index funds. So, fund managers might be more interested in the portfolio "look". Fund managers also take increased risks if they underperform the market in order to catch up the average rate of return. Fund managers increase costs by stock-picking because transaction and administration costs get higher which also reduces the rate of return for the pensioners if the gains from stock-picking are not high enough (which unfortunately happens quite often due to efficient markets). Their care for the portfolio "look" including the home bias might also negatively affect the rate of returns and risk-taking through lower diversification.

These are the reasons why politicians want to protect the insured from being exploited by pension funds as the insured do not have a chance to overcome the information asymmetry nor to find a competitor who does not behave like that. Thus, regulation of the rate of return and the monthly supervision of pension funds are instruments how to heal this market failure without destroying the market.[13] Within the Polish context, the especially high risks of older employees born before 1949 with only a short remaining working life were excluded from the risky funded layer because for those people with only a short period left for accumulating assets the fixed costs of pension funds might be too high and the risk of falling stock prices cannot be diversified away over time either.

One could argue that the defined-contribution scheme within the new unfunded first layer might increase risks for the insured people because there are no defined benefits any more. But the security of defined benefit-schemes was only theoretical in the old Polish pension system as the benefits were changed by political decisions nearly every year. Thus, one cannot argue that defined contribution schemes are riskier than the former system.[14]

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[12] See e.g. Baxter and King (2001).

[13] There is, of course, also the danger of overregulation which might lead to too low rate of returns and too low risks.

[14] On the differences between defined contribution and defined benefit schemes, see Cichon (1999).

III.2.Rate of return advantage

Not only risk diversification but also a higher internal rate of return shall be achieved by (partially) capitalizing the pension system. Many financial market analysts claim that funded pension systems have higher rates of return than unfunded systems. This is not always true as figure 5 shows for the case of Germany but except for the 1970's, the rates of return of long-term investment bonds were higher than the gross wage increases. Certainly, one has to add the higher returns from investment into equities and has to subtract management and insurance fees in order to calculate the rate of return of funded pension schemes. In order to calculate the rate of return of PAYG-systems, one also has to subtract administration costs, the benefit losses and gains from political pressure and the (negative) change rate of the number of contributors. But the higher rate of return of investment bonds is surely a first although rough indicator for the superiority of funded systems in recent years.

Higher rates of return mean that one can finance the same amount of pensions with lower contribution rates. Thus, a partially funded pension system should also have lower contribution rates than an unfunded system although to a smaller extent than a fully-funded system.

Figure 5: Rate of return advantage
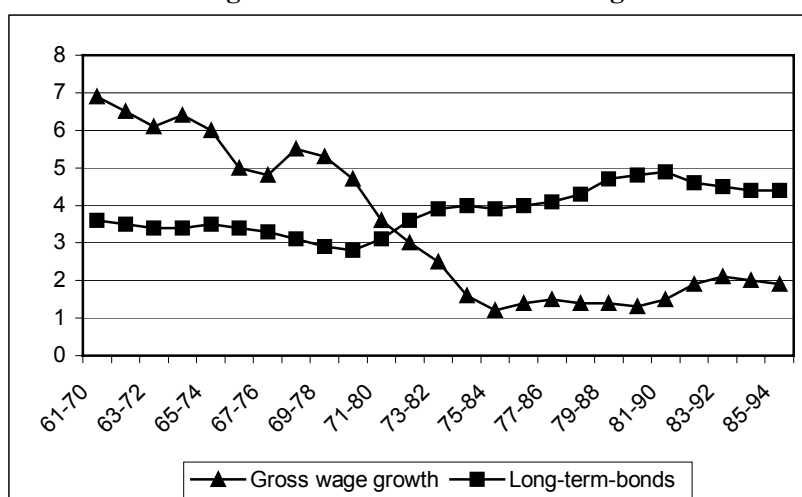
Source: Deutsches Institut fuer Altersvorsorge ("German Institute of Old Age Provision", 1998, p. 52)

Some economists, e.g. Barr (1998, pp. 213-216), believe that rates of return will fall in aging societies so that capitalized systems will also suffer from the demographic development. Thus, there will be the same problems as in unfunded pension systems. He argues that there will be less demand for securities due to the smaller number of younger people so that pensioners can sell their securities only at a lower price which lowers the rate of return of capitalized systems. This capital-

asset-meltdown-hypothesis has not been refuted yet, but other economists claim that funded systems will suffer less from the demographic development than unfunded systems. This is due to market reactions on falling interest rates because of the international interdependence of capital markets. But no-one knows exactly to what extent the funded systems can cope better with growing old-age ratios. Thus, the aim of higher rate of returns remains questionable.

Another reason why the higher rate of return might be questionable is that the transition from one system to another is not costless. So, the costs of the transition must also be taken into account if one wants to compare the rates of return. Especially older employees will suffer from the capitalization due to low funding and benefit cuts in the unfunded layer. Younger people, on the other hand, are considered as the winners of a transition so that the aim of higher rate of returns will become true – if at all – only for younger employees and future generations.

III.3. Development of capital markets

Capitalization of pension systems also entails better development of financial markets for a country in transition from communist to capitalist structures.[15] There will be more demand for insurance and financial services than in a pure PAYG-pension system and the privatization of former state-owned enterprises is also eased as pension funds are able to buy their shares. Certainly, long-term national savings will be higher because even people with a high time preference and a low savings rate will be forced to accumulate funds. As the Polish politicians promised not to finance the transition deficits from increased debts but from expenditure cuts and privatization benefits, national savings and investments rates should rise.

III.4. Labour market effects

The introduction of a defined contribution PAYG-system and a funded second layer also have considerable effects on the labour market. The close link between contributions and later pensions induces a strong incentive to (official) work.

First, this strong link prevents people from retiring early without having a loss as it was usual in the former Polish pension system. By this, expenditure for pensions sinks and so do contribution rates. In contrast with the old system, an individual has a strong incentive to work longer and to delay retirement in the new system because he/she can receive higher pensions by a shorter remaining average life expectancy and more contributions. If a man retires at the age of 66 instead of 65, he gets a pension increase of at least 7%. On the other hand, an individual has to work longer if average life expectancy rises in order to avoid pension cuts. This holds the expenditures on pensions and contribution rates constant even if individuals live longer.

The second positive effect of defined contribution systems is that the strong link between contributions and later pensions makes employees feel that public pension contributions are no tax but their own property which will be repaid later.

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[15] See Eisen (2000, p. 145-147).

So, employees do not have any incentive to evade contributions by moonlighting or by underreporting personal income. Certainly, there are people who have a very high time preference so that they do not want to spend so much money on future pensions. This sort of people will still have an incentive to evade public pension contributions. But as the pension crisis is getting acute, there is a growing awareness of these problems even among people with a high time preference so that fewer people are expected to evade after the pension reform. Less moonlighting and less underreporting of incomes enlarges the tax and contribution base so that lower taxes and contribution rates are sufficient to cover current expenditures of the state budget and the Polish pension system.

On the other hand, the introduction of a minimum pension offers an incentive for low wage earners to evade contributions after the required years of contributions (25 for men, 20 for women). Further contributions into the system would not increase the pension benefits considerably so that there is an incentive for moonlighting through the minimum pension and the positive labour market effects are reduced.[16]

Lower contribution rates, generated by less moonlighting, less underreporting, no early retirement without pension cuts, and higher rates of return of the new Polish pension system, also have favourable consequences. In general, lower contribution rates diminish labour costs which has a positive effect on the demand for labour.

Do-it-yourself activities, for example, become less worthwhile if contributions and thus the prices for low-skilled services are lower. Less do-it-yourself means more official employment in the low-skilled sector and more revenues for the state and the pension system which can lead to even lower taxes and contributions.

The trend to substitute capital for labour can also be slowed down if labour becomes cheaper relative to capital. The argument, however, that lower contribution rates lead to lower labour costs is criticized by some economists, e.g. Shoup (1969, p. 412 sq.) or Brittain (1971, p. 122). They state that employers can pass on the contributions either to the workers by lower wage increases or to the consumers by higher prices and that exchange rates adapt to the trade balance so that foreign competitors would not have a long-lasting advantage if national contributions rise. Lower contributions would only have the effect that wages rise more strongly or consumer prices decrease. Thus, there would only be a minor effect on the labour market by increased demand for cheaper consumption goods.

Palmer and Palme (1989) have shown that this can be proven by empirical facts, but only in the long run and only for certain sectors. Especially in the low-wage sector, passing on the contributions to workers is hardly possible due to already low wages being slightly above social benefits, as Nickell and Bell (1997, pp. 320 sq.) pointed out. Thus, it is no wonder that unemployment rates among low-skilled workers are especially high. Labour union models, see Oswald (1985,

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[16] This was also pointed out by Queisser (1993, p.224) for the Chilean pension reform.

pp. 166 sq.), or efficiency-wage models, see Pisauro (1991), can also explain why employers' contributions to social security cannot be totally passed on. Hence, lower contribution rates do have a positive effect on the labour market, especially for the low-skilled.

IV. Outlook – Reasons for the successful reform

The most important reason why reformers were able to introduce this new system was certainly the desolate state and unpopularity of the old Polish pension system. But also the construction of the new system led to a successful implementation and to efficient operations at the beginning.

First, the decrease of the contribution rate to the unfunded layer made possible the payments into the funded layer. Second, regulation and supervision were prepared well so that the pension funds could operate as expected. The regulation was not too strict as pension funds can still decide independently within a wide range of opportunities, but on the other hand the agency problems are diminished.

All in all, the new Polish pension system appears to be superior to the old non-funded system. As there are many transitional regulations which conserve the accrued rights to the old system, transition from the old to the new system takes a long time so that the positive effects will completely operate only after several years. But even in the short run, some of the positive effects should occur. This conclusion depends on the assumption that Polish politicians are really able to finance the transition deficits by reducing expenditures and selling state-owned firms. If (income) taxes must rise or bonds must be issued, negative effects occur which can offset or even overcompensate the positive effects, as Kotlikoff (1996, p. 370) pointed out. Higher taxes have negative effects on capital accumulation and employment, issuing bonds absorb the additional savings and crowd out investments.

Paeschke (2002, p. 418) criticizes that financial predictions were too optimistic: Due to worsening levels of unemployment, increasing evasion of social security contributions and delays in selling state-owned enterprises, revenues for the first layer and the remaining old pension system were too low so that the Social Insurance Institute (ZUS) had difficulties in paying the pensions. Only a loan out of the general state budget to the amount of four billion Zloty could prevent further increases in contribution rates to the first layer. The ZUS is also indebted to the pension funds to the amount of 7.3 billion zloty because it transferred only partially the contributions to them. This is a considerable amount of money because according to table 2, the total accumulated capital was about 27 billion Zloty in September 2002. Apparently, the partial capitalization of the pension scheme has had no important positive effects on the labour market yet since the Polish unemployment rate rose from 13.9% in 1999 to 18.2% in 2001. Further increases up to 20% are expected by the OECD. One important reason might be that only half of the contributions to the Social Insurance Institute are characterized by the above mentioned defined-contribution system as survivor benefits, health care and

nursing as well as unemployment insurance remained unchanged. As the rate of return of pension funds was only modest, the contribution rates could not be lowered either so that no positive labour market effect could materialize yet. If financial markets recover from heavy losses, average net internal rate of returns (including fees) should exceed the present 5.77% p.a. which were reported by the KNUiFE. Then, lower contribution rates might contribute to positive labour market effects of the reform. Thus, further monitoring of political decision-making and macro-economic indicators is necessary for a final evaluation the Polish pension reform.

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