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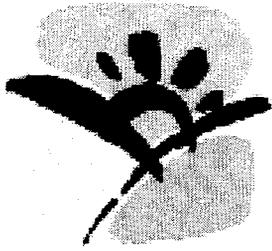
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**Shaping Pension Reform  
in Poland:  
Security Through Diversity**  
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Marek Góra  
Michał Rutkowski



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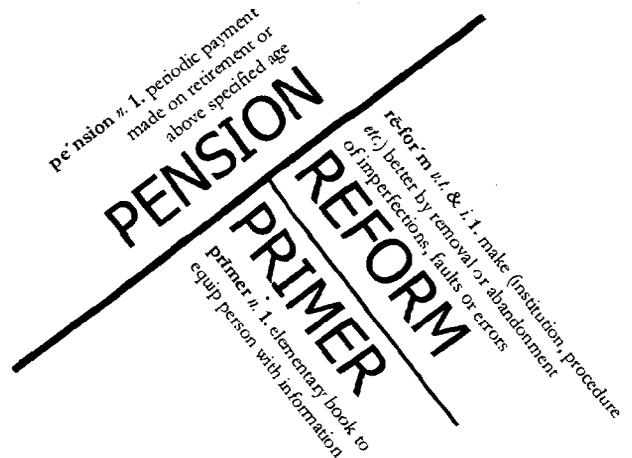




Security  
through  
Diversity

# Shaping Pension Reform in Poland: *Security through Diversity*

Agnieszka Chlon, Marek Góra and Michal Rutkowski





## Abstract

All over the world, pension systems have financing difficulties that need to be addressed. There are three ways of dealing with pension systems problems – finance it to a greater extent from general revenues, rationalise the system, which produces savings in the short run, or a full-fledged reform, changing the logic and foundations of the system.

After several years of political and professional discussions, Poland decided to follow the latter path and introduced a new defined contribution multipillar system, consisting of a public Notional Defined Contribution, pay-as-you-go first pillar, a funded private second pillar, and voluntary funded third pillar. The new framework covers only retirement savings, while other benefits still remain under the old defined-benefit pay-as-you-go regime. The reform was launched on January 1, 1999. As of this date, the old defined benefit pay-as-you-go system was terminated for workers younger than 50. The new old-age system attempts to offer actuarially fair benefits, potentially creating incentives to increase compliance and postpone retirement. Minimum benefit provision for those who fall below the guaranteed level is co-financed from general revenue. Diversification of retirement savings provides greater security to the members, as labour market developments that determine the notional rate of return in the first pillar, and financial market developments that determine the second pillar rate of return are not perfectly correlated. This is why the reform package has been named *Security through Diversity*.

This paper presents the current situation of the pension system, the struggle for pension reform in the 1990s, structure, the long-term outlook of the new pension system and the main aspects of the system design as well as first experiences from the implementation process. Long-term projections show that the new system allows for greater financial stability of the public pension scheme and increases the savings rate with a positive impact on economic growth.



# Table of contents

<b>INTRODUCTION</b> .....	<b>5</b>
<b>1. RECENT PERFORMANCE OF THE PENSION SYSTEM</b> .....	<b>7</b>
<b>2. THE STRUGGLE FOR PENSION REFORM</b> .....	<b>11</b>
<b>3. DESCRIPTION OF THE NEW PENSION SYSTEM</b> .....	<b>17</b>
3.1 <i>Financing and operations</i> .....	17
3.2 <i>The contribution rate</i> .....	18
3.3 <i>The first pillar</i> .....	20
The accumulation phase.....	20
The benefit-distribution phase .....	23
Reserve policy in first pillar.....	23
A new role for the social insurance administration (ZUS) .....	25
3.4 <i>The second pillar</i> .....	27
Regulation and supervision.....	27
Pension fund operations.....	28
Funded pension benefits.....	32
Second pillar pension funds in 1999.....	33
3.5 <i>Minimum pension guarantee</i> .....	34
3.6 <i>The third pillar</i> .....	35
The new occupational pension plans .....	36
Regulation, supervision and taxation.....	37
3.7 <i>Estimated benefits from the mandatory pillars</i> .....	37
3.8 <i>Early retirement and sector privileges</i> .....	42
<b>4. PAYG SYSTEM - FINANCING THE TRANSITION</b> .....	<b>45</b>
4.1. <i>Joining the second pillar</i> .....	45
4.2. <i>Early retirement schemes and impact of phasing-out rules</i> .....	50
4.3. <i>Overall savings rate in the pension system</i> .....	53
<b>5. LONG TERM IMPACT OF PENSION REFORM</b> .....	<b>54</b>
<b>6. PRELIMINARY CONCLUSIONS AND LESSONS FOR OTHER COUNTRIES</b> .....	<b>59</b>
<b>7. REFERENCES</b> .....	<b>61</b>
<b>APPENDIX</b> .....	<b>63</b>
Other benefits financed from the social security fund .....	72
Uniformed services pensions .....	73



## Table of figures

Figure 1. Polish pension system in absence of reforms .....	9
Figure 2. Recent developments in the Polish pension system .....	10
Figure 3. Financing and functioning of the new pension system .....	18
Figure 4. Share of initial capital in pension value, cohorts 1949-1974 .....	22
Figure 5. Demographic reserve inflow and assets, 1999-2020 (% GDP) .....	24
Figure 6. Projected replacement rates in the new pension system, cohorts 1949-74.....	38
Figure 7. Share of funded part in total benefit, cohorts 1949-74 .....	39
Figure 8. Projected replacement rates in the new system.....	40
Figure 9. Projected replacement rates in the new system – sensitivity analysis.....	41
Figure 10 Calendar of early retirement scheme withdrawal.....	44
Figure 11. Difference between Polish NDC and funded schemes accumulation.....	46
Figure 12. Deficit/surplus in the PAYG old-age pension fund in 1999-2020 .....	49
Figure 13. Accumulation of assets in Polish open pension funds, 1999-2020 .....	50
Figure 14 Medium-term impact of final pension rules vs. <i>Security through diversity</i> proposal.....	52
Figure 15. Savings in the Polish multipillar pension system, 1999-2020 (% GDP) .....	53
Figure 16. PAYG old-age fund expenditures and revenues, 1999-2050 (% GDP).....	57
Figure 17. IT system design .....	67
Figure 18. Registration of employees in ZUS .....	68
Figure 19. Registration of pension fund members .....	69
Figure 20. Contribution collection mechanism .....	70
Figure 21. Individual accounts identification .....	71
Figure 22. Social insurance system expenditures and revenues, 1999-2020 (% GDP) .....	74
Table 1. Risks with different types of pension financing .....	6
Table 2. Social-security contribution rates as share of gross wage.....	19
Table 3. Weights of old and new pension in the mixed formula.....	21
Table 4. Impact of fees on the real rate of return.....	30
Table 5. Age structure of switchers by the end of May 1999: .....	34
Table 6. Projected pension revenues and expenditures, transfer to pension fund and reserves in 1999- 2006 (% GDP).....	48
Table 7. Old and new pension system characteristics .....	63
Table 8. Initial reform proposal as in <i>Security through Diversity</i> and its changes during the reform process .....	65
Table 9. Medium-term projections assumptions .....	66



# Shaping Pension Reform in Poland:

## *Security through Diversity*

Agnieszka Chlon, Marek Góra and Michal Rutkowski<sup>1</sup>

### Introduction

All over the world, pension systems have financing difficulties that must be addressed. There are three ways of dealing with pension systems problems. The most affluent countries, especially in the European Union, have tended to opt for continued subsidies to pensions from general revenues. Countries that cannot afford large subsidies have exercised a second option: trying to rationalise their pension systems by seeking more revenues and reducing spending. The third option is fundamental reform, which is the only way of achieving a sustainable solution. But it requires a coherent vision for the design of the new pension system.

Following the Chilean and other Latin-American pension reforms, it is often asserted that fundamental reform implies replacing a monopoly of a pay-as-you-go, defined-benefit system with a fully funded mandatory defined-contribution system. From the perspective of central and eastern European countries, this reform option, despite numerous advantages, has two essential flaws. First, it does not really diversify risks. A funded monopoly merely replaces a pay-as-you-go monopoly. Secondly, because of transition costs, this option is difficult to implement in countries with a sizeable pay-as-you-go system.

This is why Poland determined that the pay-as-you-go monopoly should be replaced with a multipillar system. Future retirement savings will be diversified. Productivity growth

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<sup>1</sup> *Security through Diversity* team. Agnieszka Chlon joined Polish pension reform team in January 1997 and was Deputy Director of the Office for Pension Reform since September 1998. Marek Góra was Director of the Office for Pension Reform of the Polish government since October 1997 until Office termination in April 1999 and was previously Deputy Director (October 1996 to September 1997). Michal Rutkowski is Sector Leader for Social Protection in Europe and Central Asia Region of the World Bank and former Director of the Office for Pension Reform of the Polish Government (October 1996 to September 1997). We would like to thank Robert Palacios for insightful comments and the entire *Security through Diversity* team for their brilliant work. The views and opinions presented in the paper are those of the authors and should not be attributed to the World Bank, or any other institution or government.

and capital market returns will play equally important roles through the pay-as-you-go and funded parts of the system for providing old age pensions. The long run objective of the reform is to have about 50 per cent (initially 62.5 per cent) of the mandatory old-age contribution going to a pay-as-you-go pillar, while the other 50 per cent (initially 37.5 per cent) being shifted to a funded pillar. Since each of the pillars has different types of risks (Table 1), especially after retirement, the system's overall risk will be better diversified. Of course, pay-as-you-go and funding both offer individuals a measure of certainty about their future, but neither method can insure against common aggregate shocks. One should not 'put all the eggs in one basket'.<sup>2</sup> Finally, both pillars will operate in a defined-contribution-type framework. The aim is a transparent system, with pension based on lifetime income, fully adaptable to changing circumstances.

**Table 1. Risks with different types of pension financing**

Risk	Pay-as-you-go	Funded
Ageing population	Exposed	Not exposed
Unemployment	Exposed	Not exposed
Political bargaining	Exposed	Less exposed
Financial market crisis	Not exposed	Less exposed
Inflation	Less exposed	Exposed

The Polish pension reform was launched in 1999. The implementation followed two years of preparation, during which two sets of laws describing the new pension systems were passed. The first set of reform laws, including the law on organisation and operation of pension funds (second pillar) and the law on Employee Pension Programs (part of a third pillar), passed in August 1997. The second set of laws, including the law on Social Security System and the law on the new pay-as-you-go pensions from the Social Security Fund, passed in October and December 1998, respectively.

The new multipillar pension system consists of a notional defined-contribution, pay-as-you-go first pillar, a mandatory defined contribution, privately-managed, funded second pillar, and voluntary employee pension plans in the third pillar. The pension reform was launched on January 1, 1999 with changes to the PAYG pillar. Open pension funds started their operations in April 1999, although licensing process had begun in August 1998.

This paper looks at parts of the reform specific to Poland, but draws more general conclusions. We look at the motivation for reform, the struggle of reformers and politicians to advance the reform agenda, changes made to the initial reform proposal, the architecture of the new system, and issues arising during the transition. The final section offers tentative conclusions and lessons for other countries.<sup>3</sup>

<sup>2</sup> See, for example, Barr (1998), chapter 9 and James (1998).

<sup>3</sup> For an overview of reforms in other transition economies, see Rutkowski (1998).

## 1. Recent performance of the pension system<sup>4</sup>

The crisis of the Polish pension system had much in common with the problems in other countries' pay-as-you-go defined-benefit schemes, such as a worsening demographic-dependency ratio. But it was exacerbated by a particularly inefficient set of special rules, some typical of many former centrally planned economies (such as low retirement age and widespread sector privileges) and other specific to Poland (such as generous disability provisions). Moreover, in the early 1980s and later in the early 1990s, additional privileges and special rules were added with little or no thought to the fiscal consequences.

As a result of the latter policies, the average effective retirement age dropped to 57 years (55 for women and 59 for men), compared to legal standard retirement age at the level of 60 for women and 65 for men. Also in the 1990s, the gap between the system dependency ratio (measured as ratio of pensioners to contributors) and the demographic dependency ratio (measured as ratio of people 65+ to people 15-64) widened, and projections show that this tendency would continue in the future (Figure 1a).

It became difficult to ensure the financial sustainability of the Social Insurance Fund (FUS). Consequently, the contribution rate was raised rapidly from 25 per cent in 1981 to 38 per cent during 1987-1989, at finally to 45 per cent in 1990. This was made necessary by:

- a decrease in the number of contributors as a result of a decline in employment (Figure 2b)
- an increase in the number of new pensioners, especially in the early 90s (Figure 2c)
- growth in the real value of pensions and relative increase compared to the average wage, caused by wage-indexation until 1994 (Figure 2d)

The old-age benefit formula introduced after 1991 offered replacement rates of 76 per cent of the last salary. There was no reduction in benefit for early retirement. The formula for the basic pension was:

$$P = 0.24\lambda W + (0.013T + 0.007N)B$$

Where:

P - monthly pension

$\lambda$  - set at 0.91 in 1992 and gradually increased since 1993, to 1.00 from January 1999

W - average, gross, economy-wide monthly wage in relevant quarter

T - total years of contributions

N - other eligible years

B - individual assessment base

The old-age pension was split into three parts:

- A flat component, equal to 24 per cent of the reference wage, adjusted by a coefficient ( $\lambda$ )
- An earnings-related component, equal to 1.3 per cent of the applicant's assessment base for each year of contributions paid

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<sup>4</sup> This paper does not discuss nor cover the farmer pension system (KRUS).

- A supplement of 0.7 per cent of the applicant's assessment base for each year of non-contribution during the career. Other eligible years (e.g. bringing up children, university education) may not exceed one third of contribution years.

The individual assessment base equalled average monthly earnings over a period as indexed for inflation. In 1993, the employee chose the best three consecutive years from the last 12 years; each year since, one year was added to the averaging period, until in 2000 it reaches 10 years from the last 20. The pay in a chosen year is compared to the average, economy-wide wage for that year. The resulting ratio, capped at 250 per cent, is multiplied by the indexed figure for economy-wide earnings, reduced with  $\lambda$  coefficient to derive the salary base for the averaging process.

The minimum pension was established in 1991 at the level of 35 per cent of average salary. Indexed as other benefits since then, in 1999 it stood at PLN 450.71, which represented 33.4 per cent of average salary, net of social security contributions. Additionally, a supplement of 10 per cent of the average wage is payable from age 75 onwards.

Expenditure on retirement and disability benefits<sup>5</sup> grew, from 12.6 per cent of GDP to 15.4 per cent by 1994 (Figure 2a). Pension expenditures in Poland were higher than those in the European Union, where in 1996 social security expenditures (old-age and survivors) amounted to 12.3 per cent of GDP (44.8 per cent of total social protection spending)<sup>6</sup>. This share was different across member countries reflecting differences in the social protection systems, demographic change and other social, institutional and economic factors. The highest expenditure could be observed in Italy – 16.2 per cent of GDP, and the lowest in Ireland – less than 5 per cent, reflecting the demographic situation in the countries. The former has the oldest, while the latter has the youngest population in EU.

Expenditures on old-age benefits are expected to increase, due to the population ageing process, experienced in most of the EU countries. The same situation can be observed in Poland. Demographic forecasts show a significant increase in the ratio of older people to working age population after 2010, as a result of post-war baby-boom cohorts, with a further increase in the dependency ratio after 2040, caused by falling fertility rates and the ageing of the baby-boom generation from 1980s.

In the 1990s, more than 50 per cent of social security expenditures were on old-age pensions. In the absence of reform, projections show a small decline in spending on old-age pensions until 2003 and then an increase to the level of 8 per cent of GDP by 2020 and stabilisation at this level thereafter. In the same period, expected contribution revenues (at current rates) would drop to 4 per cent of GDP, creating annual deficit in old-age pension system of 4 per cent of GDP (Figure 1b). The same pattern could be observed within the disability fund, where projected expenditures would rise even earlier, due to earlier impact of ageing population. The contribution rate, needed to finance only the old-age system would

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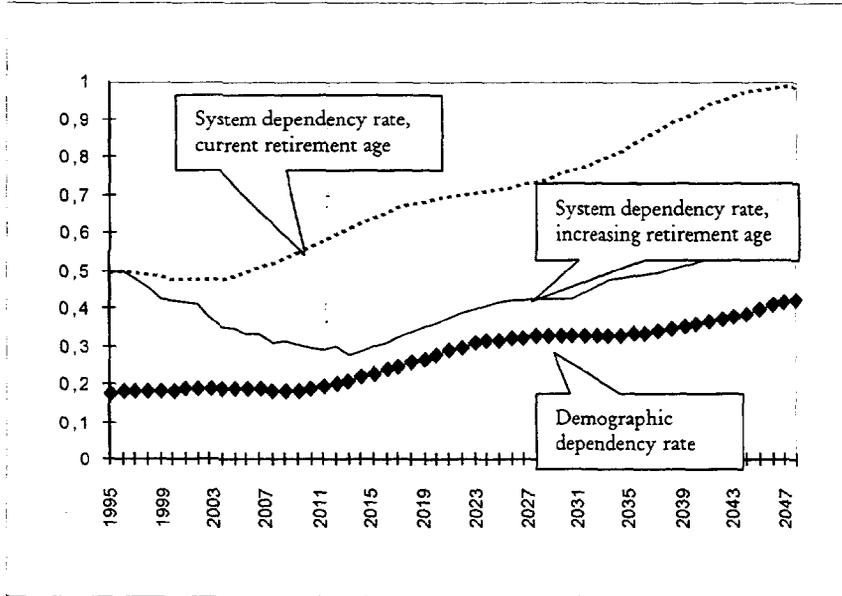
<sup>5</sup> Including both employees' and farmers' social security systems. The employee pension system expenditures peaked at 13.12% of GDP in 1994.

<sup>6</sup> Eurostat (1999)

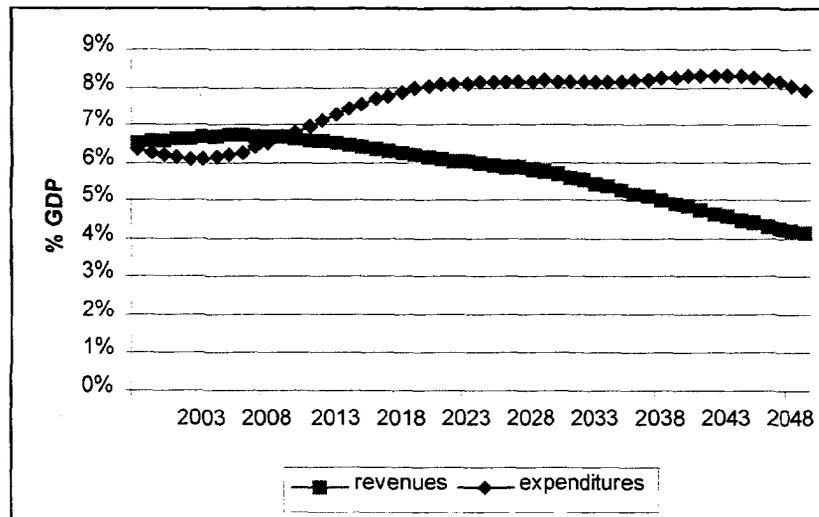
have to rise from the current 24 per cent to 42 per cent in 2050. By this time, the number of people above retirement age would be double the current level, while the number of people in working age would decrease by one quarter.

Not surprisingly, the crisis of the Polish pension system became apparent not only to social security professionals, but also to the public and politicians.

**Figure 1. Polish pension system in absence of reforms**  
**1a. Demographic estimates and projections, 1995-2050**



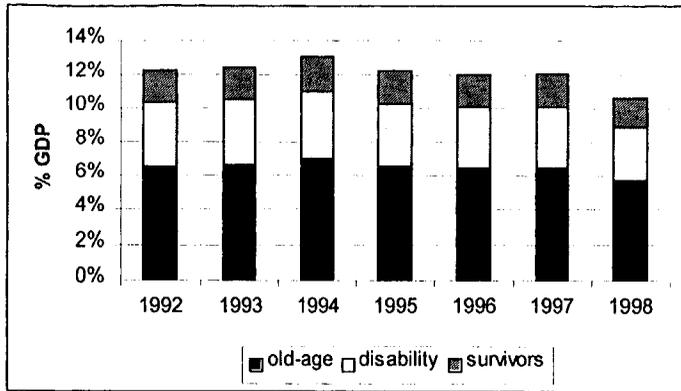
**1b. PAYG old-age system expenditures and revenues, 1999-2050**



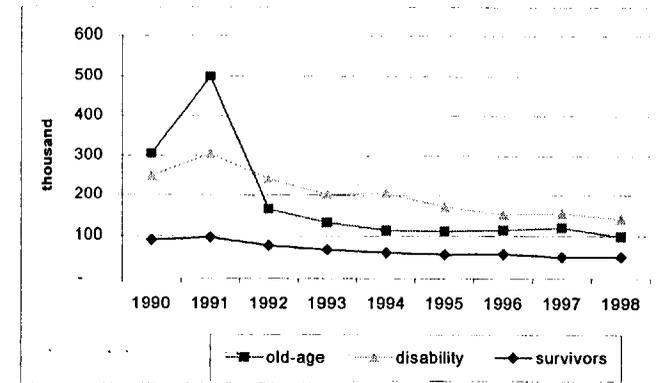
Source: Office of the Government Plenipotentiary for Social Security Reform

**Figure 2. Recent developments in the Polish pension system**

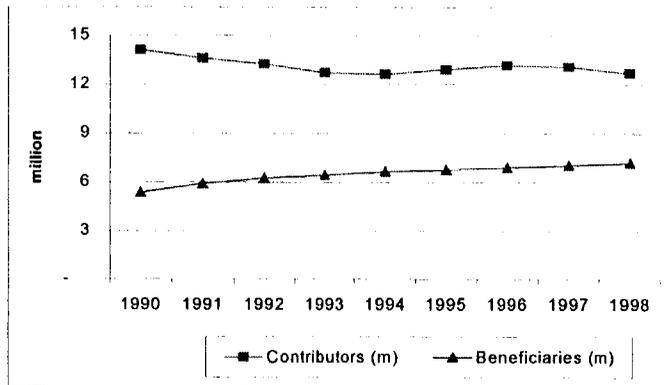
**2a. ZUS pension expenditures, 1992-98 (% GDP)**



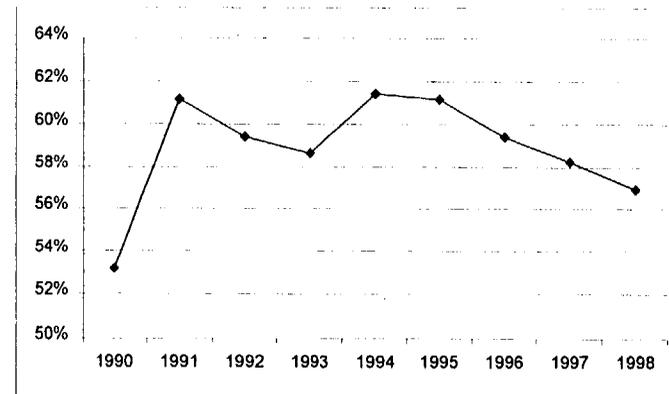
**2c. Number of new entrants to the pension system, 1990-98 (thousand)**



**2b. Number of contributors and beneficiaries, 1990-98 (millions)**



**2d. Average pension to average wage ratio, 1990-98**



Source ZUS statistics, analysis and forecasting department, Central Statistical Office

## 2. The struggle for pension reform

The most contentious point in the pension-reform debate among experts since 1989 was whether the system should remain a pay-as-you-go monopoly. Three groups emerged, roughly reflecting the world-wide division of opinion. One group, the 'rationalisers', argued that the defined-benefit pay-as-you-go system should be cut back, but remain in the same form. A second group, the 'reformers', argued that the system should be fundamentally changed: reformed, either towards a fully funded system or a multipillar system. But both of these groups, until the early 1990s, were overshadowed by those who believed that short-term preventive measures — such as under-indexation of benefits — would be sufficient (the 'non-reformers'). However, by 1992-93, this last group was on the verge of extinction.

The rationalisers' argument was that a package of reforms to the pay-as-you-go system would stop the increase in pension costs, particularly under conditions of high economic growth. This package would include consistent price (or approximate price) indexation of benefits, increasing the effective retirement age from its low level and extending the calculation base period. However, even with these reforms, projections show that the system would be on the edge of financial sustainability. A significant, adverse macroeconomic change would cause serious disruption or even a breakdown of the system. Moreover, the system would not be immune to the demographic change expected after 2006. There was a broad agreement — involving both the rationalisers and the reformers — that these reforms should be introduced as quickly as possible.

However, the reformers argued rationalisation alone would be neither *sufficient* nor *desirable*. Social-insurance reform should, they argued, not simply be associated with cuts and stringency, but with new opportunities for a generation with many working years before it. New horizons should show not only clouds of change, but also rays of new opportunity, which would make the reform more politically acceptable. They felt that rationalisation would not be *desirable* because the crisis caused by population ageing would affect any pension system purely pay-as-you-go financed, as it is decidedly more subject to labour-market, economic, political and demographic pressures than funded systems.

Reformers argued for a social-insurance system with new opportunities for its participants and with a stabilising mechanism, to resist demographic and macroeconomic pressures. In their minds, this required a move from defined benefit to a defined-contribution system and the introduction of a funded component in the pension system. The first, pay-as-you-go pillar of the new system would be downsized and made more transparent, by introducing a closer link between individual contributions and individual benefits. In the second pillar, contributions would be invested in an individual account to generate a return. Finally, the existing third pillar for additional, voluntary savings would be developed.

The debate between rationalisers and reformers became quite heated after 1991.<sup>7</sup> Initially, this had little impact on politicians. However, an increasingly noisy debate, combined with growing difficulties in paying pensions put pressure on decision-makers.

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<sup>7</sup> The description of the debate is based on Hausner (1998).

Backward-looking wage indexation of benefits meant that financial pressure sharply increased periodically. This was reflected, above all, in the inability to prepare a budget without a dramatic choice between a huge rise in the budget deficit — undermining recently recovered macroeconomic equilibrium and reversing disinflationary trends — and major spending cuts on important programmes. The successful defence of macroeconomic discipline by successive ministers of finance meant there was no choice in practice. It became necessary to under-index benefits periodically. With the help of so-called supplementary budget legislation, it was technically possible to limit the expected rise in retirement and disability pensions.

In 1991, the revaluation act on pensions introduced several changes to the pension system. The most important ones included withdrawal of special benefits due to the work in hazardous conditions, restoration of some link between earning history and level of benefit, restrictions of possibilities of combining working with pensions (by imposing wage limitations), caps on the individual assessment base at the level of 250% of average wage and a new minimum guarantee of 35% of average wage. Most changes aimed at reducing expenditures, but those remained high and in 1992 exceeded 13% of GDP. Additional measures were taken in 1992 by cutting the wage base used for calculating benefits from 100% to 91% of average wage.

Pensioners and their representatives opposed this policy. It became a major political burden and partly accounts for the sharp fall in support for the post-Solidarity government, and its eventual collapse in 1993.

The post-communist opposition that won the elections promised, among other things, a return to 'fair' benefits. However, the new government faced not only the same difficulties as before, but also some new ones. Public protests had been accompanied by formal appeals to the constitutional tribunal which repeatedly ruled in favour of those who questioned the amended regulations. The new parliamentary majority could have formally overruled the verdicts of the tribunal. In most cases it did not, feeling bound by its election promises. The verdicts of the tribunal came into force and the state's unpaid debts to pensioners grew rapidly, forming a significant part of public-sector debt.

The constitutional tribunal consistently ruled the practice of repeated temporary suspension of the state's commitments to pensioners as unconstitutional. At the same time, it clearly stressed that this did not preclude the possibility of a permanent change in the regulations, provided there was appropriate legislation. Thus, it was only when legal and political factors prevented *ad hoc* manipulation of the pension system that the warnings of experts and the idea of major reform was taken seriously.

The coalition pact of the SLD-PSL government, which assumed office in the autumn of 1993, included a very general commitment to reform the social-insurance system. The idea was to improve the existing system rather than change it radically. Therefore, the plan was geared more towards protecting accrued rights than limiting them.

Only in June 1994 was the idea of radical reform — introducing a new mandatory funded pension — suggested, in the 'Strategy for Poland' economic programme. The

government and parliament accepted the strategy presented by the deputy prime minister and minister of finance (G. W. Kolodko<sup>8</sup>). As a result, in 1994 the new law introduced price indexation of benefits, simultaneously increasing the  $\lambda$  coefficient in pension formula from 91% to 93%, and then by 1% per year thereafter. Finally, the base reached the level of 100% in 1999.

The heated debate between the minister of finance (the 'reformer') and the minister of labour (L. Miller - the 'non-reformer' turned 'rationaliser') lasted a year and a half (from mid 1994 to the beginning of 1996). It was mostly about their competing visions of reform. The ministry of labour set out a plan for limited rationalisation and reorganisation of the pay-as-you-go system, with a marginal role for the funded pillar. The plan consisted of

- reducing the growth rate of pensions paid to the uniformed sector (police, army, *etc.*), by moving to the same indexation rules applied to other employees
- gradually increasing the contribution rate to the agricultural system
- introducing new rules for disability qualification
- gradually increasing the retirement age

These proposals, adopted by the government in May 1995, were then submitted for public consultation. However, the minister of finance regarded them as much too timid. Instead an alternative model was prepared, based on the Chilean reform. It envisaged the replacement of the pay-as-you-go system with a fully funded plan and the introduction of a minimum state pension. However, this programme was never submitted to government. It was presented only with the intention of stimulating a debate that might produce alternatives to a modified pay-as-you-go system. It largely achieved this goal: public-opinion research showed the ministry of labour's plan was perceived as conservative and that people expected reform that would be more decisive. From the initial plan, only the change to disability qualification rules was implemented<sup>9</sup>.

After the consultation process, the government recommended a revised programme giving a greater role to the funded component in the autumn of 1995. This was submitted to Parliament for debate at the end of 1995, but the minister of finance remained opposed. The debate took place in April 1996, by which time a new prime minister (W. Cimoszewicz) and a new minister of labour and social policy (A. Baczowski) were in office. The latter was also appointed the first plenipotentiary for pension reform. He strongly supported fundamental pension reform, and so announced in parliament that the government's programme still needed final 'touches'. In particular, he announced his intention to develop the idea of funded pensions, which had been included in the opposition's plans (Solidarity's proposed solution).

In 1996, as a result of protests from pensioners, the indexation rules were made more generous. According to those rules, the real growth of pensions would be decided annually in

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<sup>8</sup> See Kolodko (1996).

<sup>9</sup> According to new scheme, disability is granted on the basis of incapacity to work, not health loss as it was before.

the state budget. The successful passage of the bill through parliament was helped by key personnel changes at the ministry. Baczkowski put a great deal of effort into getting this bill passed clearing the way for fundamental reform by easing some of the tensions concerning the pension system.

The change in the cabinet meant there were now reformers in both essential posts of labour and finance minister. They began to co-operate closely. Baczkowski held a unique position in the government because he had originally been a member of Solidarity. In 1992, while still an activist, he had been deputy minister of labour. He demonstrated his negotiating skill during the post-communist coalition (SLD-PSL) government, and became chairman of the tripartite commission on socio-economic affairs, established at the beginning of 1994.

Quarrels in the governing coalition had caused some members of the SLD leadership, including the prime minister to establish a dialogue with the opposition. Awarding Baczkowski a ministerial post was a good way of winning their trust. With the support of the prime minister, the finance minister and the encouragement of the opposition, he began work on a completely new reform program. However, for political reasons, it was presented merely as an update and an expansion of the previous proposal. The office for pension reform — a team of experts assembled by Baczkowski — prepared the programme. The new pension reform programme, *Security through Diversity* was published in February 1997, three months after the shocking, sudden death of Mr. Baczkowski.

*Security through Diversity* was wholeheartedly embraced by Baczkowski's successors, Jerzy Hausner (February-September 1997) and Ewa Lewicka, who took over in November 1997 after the return to power of the Solidarity-based coalition. Their sincere conviction regarding pension reform and their professional and political efforts made it possible for reform to proceed. The legislative process that followed the *Security through Diversity* program was also divided between the two governments. The first set of laws included:

- Law of 28 August 1997 on organisation and operation of pension funds
- Law of 22 August 1997 in employee pension programs
- Law of 25 June 1997 on using privatisation proceeds to support pension reform

Parliamentary discussion on the above laws was fairly short, mostly due to the fact, that the laws created new elements in the pension system, and did not change any of the existing rules. The laws gained the support of the tripartite committee, which also allowed for quick legislative action in Parliament. Though the rest of the bills were not legislated, the two that were passed announced the date of the reform introduction as of January 1, 1999. The reform calendar started in August 1998, when the licensing process for the new pension funds started. Everybody also agreed that privatisation revenues should be used to finance introduction of the funded component of the system<sup>10</sup>.

The second set of laws included:

- Law of 13 October 1998 on social security system

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<sup>10</sup> Such a postulate was also formulated in an earlier Solidarity proposal.

- Law of 18 December 1998 on old-age and disability pensions from Social Security Fund

It took half a year to formulate the draft laws. During this period the reform team focused on preparing detailed proposals, including re-drafting the old-age and disability pensions law in order to unify existing regulations by including all the arrangements in the old system<sup>11</sup>. This was also a time of political consultations both within governmental departments and with the tripartite committee. The latter was especially important. As a result of those meetings several changes were introduced to the initial proposal.

The most significant change concerned the retirement age. The initial reform proposal of equal minimum retirement age of 62 was controversial. Some conservative politicians and trade unions were attached to a more traditional view of women's role in society and proposed differential pension ages of 60 for women and 65 for men. They argued, that already the effective retirement age would increase, if current rules remained (60 for women and 65 for men), due to the withdrawal of the early retirement privileges. This especially concerned women, who could retire at the age of 55, after contributing for at least 30 years. As a result, the final drafts sent to the Parliament included different retirement ages for men and women. Despite several attempts, this was not changed during parliamentary debates<sup>12</sup>.

Another change grandfathered the old system for those retiring through 2006. This regulation was a result of demands from trade unions, not to withdraw early privileges from those who planned to retire within the next few years<sup>13</sup>. Also, this change was in line with Constitutional tribunal verdict to recognise accrued rights for early retirement. The government agreed that a person has a right to expect his or her retirement rules not be changed 8 years prior to retirement<sup>14</sup>. This regulation was questioned by trade unions, who demanded a longer transition.

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<sup>11</sup> The first draft of the old-age pensions law included only paragraphs for the population covered by reformed PAYG. However, this opportunity was used to unify the existing regulations, as well as to introduce several rationalizing changes, regulating existing practices, which were not specified in the law. Unification also helped to shape the same solutions for all covered groups (for instance, the eligibility criteria for survivor benefits were unified for miners and other occupations, some regulations from decrees were introduced to the laws, adjusting legislation to Constitutional requirements).

<sup>12</sup> However, upon the introduction of the reform, women realised that lower retirement age with actuarially reduced pensions results in significantly lower pensions at the age of 60 compared to age 65. In mid 1999 the Plenipotentiary started working on alternative proposal, allowing women to retire at later age with Labour Code protection of the work place, forbidding employers to fire from work on basis of age.

<sup>13</sup> Most occupational groups enjoying early retirement schemes could retire up to 5 years prior to legal retirement age. However, several groups had looser criteria. For example, miners could retire after 25 years of working underground regardless the age, teachers after 30 years of working, also without age limit, ballet dancers could retire at 38. Introduction of a year 2006 rule allows all those groups and three cohorts of those retiring at 55 to draw their pension under old regulations.

<sup>14</sup> Approximately 1/3 of required tenure. It was determined as a minimum vesting period for acquired rights, which was in 1999 confirmed by the Constitutional tribunal, that overruled a complaint from the railway workers that the pension reform changed their acquired rights to early retirement.

This part of the legislative package was very difficult, both from the technical and social point of view. Intensive consultations led to numerous modifications of proposals. On the grounds of lack of time to formulate final opinion due to constantly changing drafts, OPZZ refused to present an opinion within tripartite committee. The final opinions of trade unions were send directly to the Parliament. Both OPZZ and Solidarity expressed negative views on the changes in the PAYG old-age system, especially focusing on early retirement issue.

The government decided to continue the legislative process, despite the negative opinion of the trade unions. One of the goals was to have the general law enacted before the scheme replacing early retirement was negotiated. The proposals were presented to the Parliament in April 1998.

Discussions in Parliament were much longer than in the case of the first package. This was expected for two main reasons:

- The laws changed the functioning of current system and as such, were more difficult to pass. Parliamentarians expressed their concern about the reduction of replacement rates and intra-generational redistribution in the PAYG system
- The opposition objected to the changes, by extending discussions in the Parliamentary Committee. Because it could not formally object to the reform, as the SLD-PSL government initiated the reform process, this could potentially slow-down and, eventually, postpone the reform
- Trade union representatives in the Parliament continued to push for drafting solutions replacing early retirement before the laws were passed

Parliamentary discussion led to additional changes in the law. The major ones included: changes in the notional accounts indexation from discretionary rule as annually defined in state budget law to fixed 75% growth of wage bill, change in the benefit indexation rule from at least prices to at least prices plus 20 per cent of real average growth, permission to combine full disability benefit and earnings in the labour market<sup>15</sup>, change in the coverage of military forces from everybody under age 30 to only new entrants.

The Parliament accepted the laws by the end of 1998 allowing the reform to be launched in January 1999.

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<sup>15</sup> The government proposal allowed disabled people to work in labor-protected companies.

### 3. Description of the new pension system

#### 3.1 FINANCING AND OPERATIONS

Under the new system, old-age pension benefits can be derived from three pillars<sup>16</sup>. The first and second pillars will be universal and mandatory, the third voluntary. The first will be pay-as-you-go financed, the second and third funded. Contrary to the old system, the two mandatory pillars will be based on the defined contribution principle, where benefits are linked to accumulated lifetime contributions and earning returns based on either financial returns or wage bill growth. Benefits also will be affected by changes in life expectancy at the retirement age. Figure 3 summarises the differences in the financing and functioning of the two mandatory pillars of the new system.

The fundamental concept underlying the reform is that security comes from diversification of the sources of pension income, hence 'security through diversity'. The first and second pillars are linked to the labour and capital markets, respectively. The rate of return in the first pillar is linked to the rate of growth of the covered wage bill, in the second and third, the rate of return on investments. There is some evidence that these are not perfectly correlated<sup>17</sup>. In this case the system is more stable. The long-term target is that half of the system will be funded and half pay-as-you-go. The target contribution rate for the old-age system was 18 per cent of wage, net of contributions. Half of this is shifted to the second pillar. The rest is paid to the pay-as-you-go NDC pillar. The first pillar contribution would be steadily reduced until reaching 9 per cent. This level of funding was both desirable from a diversification point of view and affordable from the fiscal perspective. Greater funding creates a short-term cash-flow deficit in the first pillar, financed, according to the law, from privatisation revenues. On the other hand, participation in the funded pillar reduces the accumulation of implicit debt for the baby boom cohorts, which helps to maintain balance in the pay-as-you-go pillar in the future.

The current pay-as-you-go system is closed for those born after 1948 and converted to a 'Notional Defined Contribution' system, forming the new first pillar. All people born after 1968 are covered by both pillars and those born between 1949 and 1968 have a right to either participate in both pay-as-you-go and funded pillars or to choose to be in the new first pillar only. Both pillars are mandatory for new entrants to the workforce.

Public opinion showed support for reform. Some 73 per cent of people agreed that pensions should be closely related to contributions and the length of time they were paid, and 68 per cent that pensions should be derived from employee contributions, capitalised over their working life<sup>18</sup>.

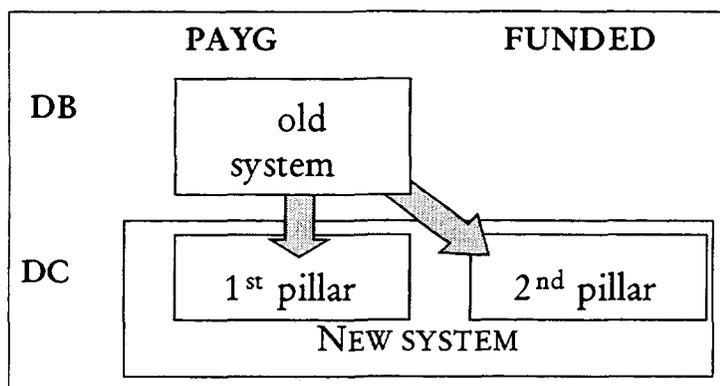
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<sup>16</sup> Disability and survivor pensions remain in the public pay-as-you-go scheme.

<sup>17</sup> Jagannathan and Kocherlakota (1996) cite evidence from the US. Palacios (1998) shows the correlation between annual wage growth and equity returns to be close to zero for four OECD countries.

<sup>18</sup> Results of opinion polls, conducted on the request of Government Plenipotentiary for Social Security Reform, April 1997.

**Figure 3. Financing and functioning of the new pension system**



### 3.2 THE CONTRIBUTION RATE

Under the old system, contributions of 45 per cent of earnings plus subsidies from the general budget (approx. 1.5 per cent of GDP) financed retirement, disability, and other benefits, such as work injury, occupational diseases, sickness and family allowances. Over half of expenditures (about 24 percentage points of wage bill) were for retirement pensions. In the new system, nine percentage points of the contribution are diverted to mandatory funded pensions. The individual's notional defined-contribution account will be credited with 15 percentage points of the contribution. The remaining 21 percentage points will finance other pay-as-you-go benefits<sup>19</sup>.

Until the end of 1998, employers paid the entire 45 per cent contribution, based on the total wage bill in the companies. Under the new system, the contribution payment system became more complex. First, the contribution was divided into separate parts, reflecting different long-term and short-term risks and second, it was divided between the employee and employer. Starting from January 1999 each pays equally for old age and disability insurance, work injury will be the responsibility of the employer and sickness of the employee. Employees' earnings were grossed up to reflect their new contribution, so the change is neutral with regard to net wages and total labour costs. The intention was to make financing more transparent to employees.

After the reform, the total contribution rate therefore falls to 36.59 per cent ( $45/(100 + \text{employee's contribution})$ ). Table 2 shows the structure of contributions to the new system. Each part of the contribution will be allocated to separate funds within the social-security fund (FUS). Each sub-fund will prepare its own actuarial forecast, improving the transparency of the system and allowing for better management of all components of social security.

<sup>19</sup> These include disability, survivors, work injury and sickness benefits. The paper focuses only on the old-age part of the social security system. A brief description of the rest of pay-as-you-go scheme can be found in the Appendix.

**Table 2. Social-security contribution rates as share of gross wage**

<i>Contribution</i>	<i>Total</i>	<i>Employee</i>	<i>Employer</i>
old age	19,52%	9,76%	9,76%
disability&survivor	13,00%	6,50%	6,50%
sickness&maternity	2,45%	2,45%	-
work injury	0,4% to 8,12%	-	0,4% to 8,12%

The old age contribution is divided between the pay-as-you-go pillar (12,22%) and the funded pillar (7,3%). The contribution is collected centrally and transferred by the Social Security Institution. Contributions are registered on individual accounts in both pillars, forming the base for future benefits. All contributions are tax deductible and pensions paid are taxed in both pillars.

One aim of the reform is to cut the contribution rate from its current, very high level. This effect is achieved by increasing the effective retirement age from its current level of 57 and lowering the average replacement rate by introduction of notional accounts, which reduces benefits by shifting the longevity risk to beneficiaries. An actuarially fair benefit formula increases incentives to postpone retirement decision.

The reform introduces an upper limit for contributions of 250 per cent of average earnings<sup>20</sup>. Furthermore, the contributions to third pillar employee pension plans are social contribution deductible, up to the level of 7% of individuals' earnings<sup>21</sup>. The above changes are expected to have little impact on the contribution revenues. Only small fraction of the population earns more than 250% of the average wage and, with existing cap in the benefit formula, most of them did not report higher earnings to social security system. The 7 per cent reduction also existed in the previous arrangement, where employers could deduct contribution to group life insurance schemes up to 7 per cent of company average salary from the wage bill reported to ZUS. The total effect of the above revenue losses should not exceed 0.3% GDP annually.

The social security system covers employed and self-employed. Additional contributions are transferred from the state budget for periods of national military service, nursing disabled child and parental leave. The periods of unemployment are covered from the Labour Fund. Those intergovernmental transfers are estimated to run about 0.2 – 0.3 per cent of GDP annually.

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<sup>20</sup> This corresponds to the maximum earnings cap taken into account in the old pension formula.

<sup>21</sup> Because there is no favorable tax treatment in third pillar arrangement, deducting contribution to employee pension schemes from social security contribution base allows employers to establish third pillar plans without additional labour cost.

### 3.3. THE FIRST PILLAR

#### *The accumulation phase*

12,22% of employee's gross earnings, paid by both employer and employee will be registered in the individual's notional account. These contributions will then be indexed in line with 75% of the quarterly growth of the covered wage bill. Indexation in line with the wage bill, rather than average wage growth allows for better stabilisation of the pay-as-you-go system, as the liabilities grow in line with revenues, affected both by the average wage growth and growth of labour force<sup>22</sup>. The sum of uprated contributions, 'virtual' or 'notional capital' will then form the basis for the individual's pension.

Indexation in line with the wage bill is designed to give contributions paid in early years similar weights in determining the overall pension value as those paid just before retirement. However, because the notional interest rate is below the growth of the covered wage bill, the contribution rate can be reduced in the future, without sacrificing the financial stability of the system. Once the system is mature, the notional rate of return could be increased to 100 per cent wage bill growth.

The benefits in many pay-as-you-go systems are related to earnings only over a short period<sup>23</sup>. In the old Polish system, earnings prior to 1980 would not influence the individual wage used for pension calculation. Earlier periods would only be reflected in the number of contribution years accrued in the pension formula. The result is redistribution from people with longer working lives to people working for a shorter period, and from people with flat age-earnings profiles (generally manual workers) to people with steeper earnings paths (generally professional and managerial workers). The new system ensures that contributions count throughout the working life, and so removes an undesirable and unintended redistribution.

Each participant annually, by the end of March, will receive information about his or her virtual capital account balance. ZUS will provide standardised estimates of the pension value under different assumptions of retirement age<sup>24</sup>.

Initial capital in the first pillar. People who started their working life before 1999 have 'initial capital' added to their accounts in recognition of pension rights accrued under the old system. Initial capital will be calculated to deliver the same pension benefit as the old formula (adjusted for age and contributable years), as if everyone retired on the last day of the old system. There will be no differentiation of initial capital between those who participate in both pillars or in one pillar only<sup>25</sup>.

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<sup>22</sup> See: Valdes-Prieto (1999)

<sup>23</sup> See Disney and Whitehouse (1999 - forthcoming)

<sup>24</sup> Old-age benefit estimates will be provided after 2003, when all contributors will have calculated their initial capital.

<sup>25</sup> This was not the case, for example in Hungary, where acquired rights were reduced for those who decided to switch to funded pillar.

This approach to the pension rights recognition was mainly a result of the lack of appropriate individual data. In the old pension system, the Social Security Institute received individual information only upon retirement. Because most of the individual records prior to 1980 were destroyed, this method provided a way to deal with initial notional account status. Also, this allows for the gradual reduction of replacement rates in the pay-as-you-go system, as the initial capital portion of the notional account decreases over time. Due to difficulties in finding appropriate records, the law sets a period of 5 years to calculate the initial capital for all contributors in the new pension system.

The formula for the initial capital calculation is:

Initial Capital ( $C_0$ ) =  $P_0 * G_{62}$ , where:

- $G_{62}$  unisex life expectancy at the age of 62 in 1998 (209 months).
- $P_0$  old-age benefit calculated as of December 31, 1998, with constant element adjusted for work experience and age of a worker<sup>26</sup>.

The G-value used for the calculation uses one retirement age. If G-values for 60 and 65 were used to calculate the initial capital, women with identical work history would receive 30% higher initial capital. To avoid this, the G-value was set at the average level of age 62. That, combined with lower retirement age for women would create significant drop in pension value between women retiring in the old and new systems in 2008 and 2009 respectively, i.e. women lose from conversion.

In order to compensate for this, the first five cohorts in the new system, will receive their pensions according to another transition rule. Namely, pensions granted in the years 2009-2013 will be calculated according to mixed old-new pension formula. This formula applies to those women, who will not participate in the funded pillar.

**Table 3. Weights of old and new pension in the mixed formula**

Year	Old pension	New pension
2009	80%	20%
2010	70%	30%
2011	55%	45%
2012	35%	65%
2013	20%	80%

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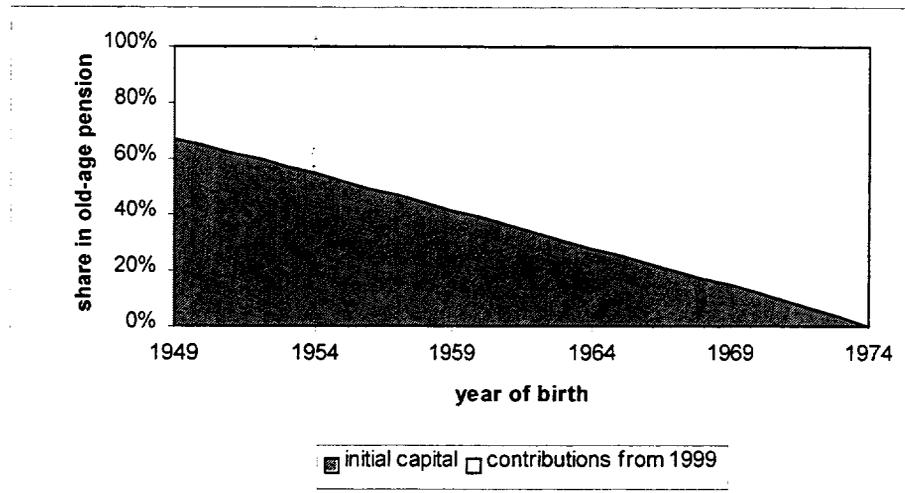
<sup>26</sup> Constant element in the formula is multiplied by adjustment factor  $\rho$  equal to  $\min\left(\sqrt{\frac{A_i - 18}{A_r} * \frac{C_i}{C_r}}, 1\right)$ , where

$A_i$ =individual's age at the end of 1998,  $A_r$  = retirement age (60 for women and 65 for men),  $C_i$  years of contributing at the end of 1998 ( $=\text{Min}((L+S); (\frac{1}{3} L))$ ),  $C_r$  = required years of contributing (20 for women and 25 for men).

The initial capital calculation is rather generous, because the old system offered significantly higher replacement rates than the new system. However, using current level of life expectancy to calculate initial capital (as opposed to projected life expectancies) and lower indexation of the accounts allow for reduction of the implicit debt for the cohorts covered by the reform, which results in additional reduction of replacement rates in the new system.

Initial capital will count for more than 60 per cent of the benefit for the oldest cohorts covered by the new system, falling gradually for subsequent generations (Figure 4). The impact will be smaller for younger cohorts, until it disappears for new entrants to the labor market.

**Figure 4. Share of initial capital in pension value, cohorts 1949-1974**



Note: Benefit share from contributions from 1999 includes first and second pillars

Assumptions:

- Average wage earners, starting career at the age of 25
- 40 years of working career
- Average wage growth: 4 %
- Rate of return from funded pillar: 6%
- Administrative fee from contribution: 5%
- Administrative fee from assets: 0.6%
- Annuity company fee: 6%
- Rate of return on annuity: 2%

### *The benefit-distribution phase*

The system will have a minimum pension age of 60 years for women and 65 years for men. The old-age pension is calculated according to the formula:

$$P_n = \frac{\sum_{i=k}^n \left( c_i \prod_{j=i}^n (1+r_j) \right)}{G_n}, \text{ where:}$$

$P_n$  old-age pension at age  $n$

$c_i$  contribution in year  $i$

$r_j$  rate of return in year  $j$

$k$  age of entering to social security

$G_n$  average life expectancy at retirement age in the calendar year of retirement

This formula adjusts the level of benefit both to the value of contributions paid during entire working career and life expectancy at the retirement age. The formula still redistributes between men (living shorter) and women (living longer), by using the unisex life expectancy tables. However, it automatically adjusts for increasing life expectancy that is observed in the Polish population, increasing the stability of the system.

Due to the actuarial calculation of the benefit, the new system has stronger incentives to continue work after the minimum retirement age than the does old system. Each additional year of work and contributions will be rewarded with a clear increase in the net present value of pension benefits, as the accumulated notional capital increases and life expectancy decreases.

Benefits in payment in the first pillar will be indexed to at least consumer prices increased by 20% of real wage growth. Regulations, however, allow for more generous uprating of pensions, which stays at a discretion of annual state budget law.

Notional capital is simply an account of rights and it cannot be liquidated at any point in time. The accounts of deceased persons are terminated and form an inheritance gain, which is used to increase the revenues of the pay-as-you-go system<sup>27</sup>.

### *Reserve policy in first pillar*

The defined-contribution system is notional in the sense that funds are not built up: it is still a pay-as-you-go system. Thus, at any time it is dependent on the cohort of workers paying for the benefits of the cohort of pensioners, and so is vulnerable both to economic and demographic shocks. While the former cannot be anticipated, the latter, to a certain extent can, and some measures can be taken to make the system less vulnerable to demographic

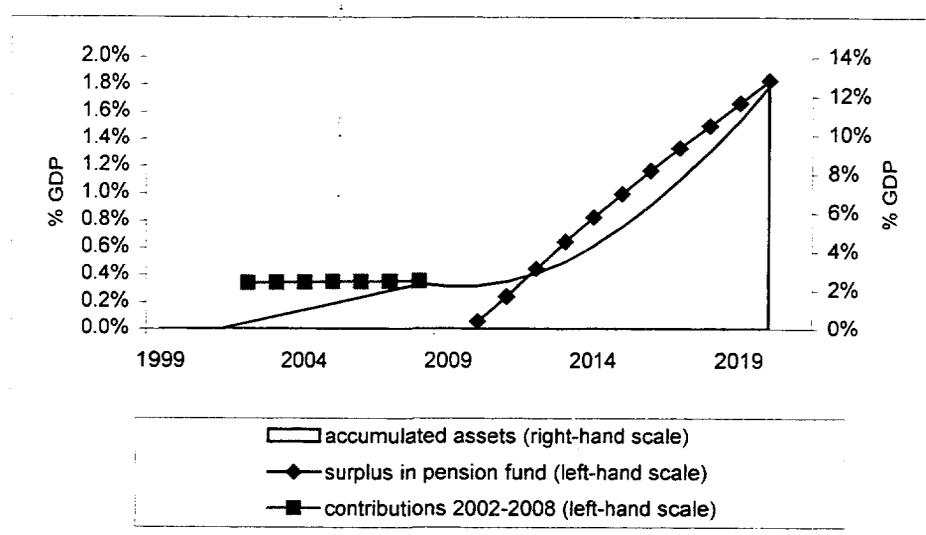
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<sup>27</sup> This is not the only solution possible. For example, in Sweden, the notional capital of deceased person is divided between survivors and registered on their individual accounts

changes. To stabilise the contribution rate in the system in the face of demographic fluctuations, reserves will be set aside. Reserves will be built up when a large, 'baby-boom' cohort is working, and drawn down when it retires.

The reserve system is equivalent to partial funding of the pensions' systems first pillar. The 'buffer fund' or so-called demographic reserve fund, will consist of any surplus in the first pillar and one percentage point of wage bill (approx. 0.35 per cent of GDP) transferred to the demographic reserve fund in years 2002-2008. The demographic reserve can be additionally supplemented from privatisation revenues, if stated in separate legislation. Interest, and any extra revenues, will also be added to the fund. According to estimates, assets of the reserve fund will reach 14 per cent of GDP by 2020 (Figure 5).

**Figure 5. Demographic reserve inflow and assets, 1999-2020 (% GDP)**



Source: Social Budget Model,

Assumptions: rate of return: 3.4 – 3.2%, no decline in contribution rate

The aim of such reserve policy is to ensure that the pension system is entirely self-financing, will not need subsidies from the general budget (aside from those, that are purposely designed) and that contribution rates could be steadily decreased in the future. The demographic reserve fund will be managed by the social insurance administration until 2002. After this date, fund management will be contracted out to private asset managers, following a tender procedure. The law allows one asset manager to manage up to 15% of total assets of the demographic reserve fund. The investment limitations are similar to those of the open pension funds in the second pillar (see section 3.3). Additionally, the investment policy should be guided by a 50 year forecast of revenues and expenditures of the pay-as-you-go pension fund. This requirement was introduced to ensure an appropriate level of liquidity in the system. The periods of surpluses and deficits in the pay-as-you-go system continue for several years, following demographic developments. The reserve accumulation and investment period should follow the projected needs of the pay-as-you-go pension fund.

### *A new role for the social insurance administration (ZUS)*

The role of the social insurance administration also changed following the reform to the pension system. Under the new system, the social insurance administration is responsible for:

- Managing individual's notional accounts
- Calculating and paying out first pillar pensions
- Managing old pension system for people born before 1948, calculating and paying out pensions
- Managing other parts of social security system – disability, survivor, sickness, maternity, work injury and other benefits
- Collecting all social security contributions<sup>28</sup>
- Keeping a database of all contributors<sup>29</sup>
- Keeping a database of all employers and other contribution payers
- Transferring contributions to open pension funds
- Supervising the (contracted out) management of the demographic reserve fund.

ZUS needs substantial restructuring to meet the challenge of the new pension system.

By 1998 ZUS employed around 40,000 people in its headquarters, 51 branches and more than two hundred inspectorates. Each of the branches had significant independence, including separate Supervisory Boards. There was little or no communication between branches<sup>30</sup>.

Lack of qualified personnel also resulted in a weak position of ZUS in Labour Court, which almost always took side of beneficiaries<sup>31</sup>.

The social security system law changed the institutional structure of ZUS. As of January 1, 1999 the institution gained legal entity status and was no longer a part of public administration system. This change was a prerequisite to introducing better resource management and proper accounting principles<sup>32</sup>.

One of the most important changes was the creation of a more centralised management structure. The new social security law abolished the Supervisory Boards in all ZUS branches

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<sup>28</sup> ZUS also collects health care contributions and Labour Fund payments from employers,

<sup>29</sup> Also for the purpose of health care system.

<sup>30</sup> As a result, for example, there were cases when people would draw two or more pensions.

<sup>31</sup> For instance, ZUS lost a case, when plaintiff suffered a work injury working in one place, simultaneously receiving sickness benefit from another employer. Though ZUS argued, that one should not work on sickness leave, the Labour Court ordered to pay both sickness and work injury benefit.

<sup>32</sup> For example, as a part of public administration, ZUS was not obliged to account for amortization of fixed assets, which lowered reported costs.

and introduced one General Supervisory Board that consists of 15 people (5 representatives of: government, employers and trade-unions and pensioners organisations). The new Board was established in April 1999. The responsibilities of the Board cover the following:

- setting the rules of management operations
- assessment of the management members
- approving yearly financial reports of ZUS
- evaluation of annual financial plans of FUS (social insurance fund) and demographic reserve
- evaluation of draft laws in the field of social security
- assessment of the salary structure of ZUS employees (including management)
- choice of the auditor
- evaluation of the candidate for the President position
- evaluation of ZUS statutes.

Introduction of the individual accounts and transfer of contributions to the second pillar required the design of a new IT system in ZUS. Earlier attempts to introduce the individual accounts were altered, in order to fit the requirements of the reform. The most important change led into the introduction of a centralised database to be able to instantly process the information received. According to the law, ZUS has to transfer contribution to the second pillar within two days from receipt of information and contributions from the employers<sup>33</sup>.

The decision to leave collection of the funded pillar contributions to ZUS was made for several reasons. The most important was that ZUS reports better collection than the tax revenue service in Poland. Both systems required significant changes to allow for monthly information registration, and ZUS was already advanced in preparation of a computer system that could cope with such a task. The Polish government also decided to collect health care contribution through the social insurance administration, which lowers the overall cost of social security management and administration<sup>34</sup>. In the future, contribution collection and benefit payment could be separated under two independent institutions, which would help to divide between the clearinghouse role of ZUS and the role of pay-as-you-go social security system manager.

One of the most important implementation issues was the identification of contributors and employers in the system, as there is no unique social security number for Polish citizens. At the moment there are two databases for individuals and two for companies operating in Poland. It was decided, that ZUS will use those databases to identify participants in the social security system, rather than introducing a new identification number. These are:

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<sup>33</sup> It is 5 days in 1999, 4 days in 2000, 3 days in 2001 and on two days from 2002.

<sup>34</sup> See Demarco and Rofman (1998) for discussion of contribution collection and transfer.

- Personal identification number (PESEL) for individuals
- Tax identification number (NIP) for individuals and employers
- REGON – enterprise identification for employers.

Because all the systems include mistakes, ZUS IT system (KSI) is designed to use two identification keys for both databases. Yet, the first months of implementation proved that even using two separate keys does not eliminate all mistakes. Problems with proper identification of individuals still occur.

Centralised collection and running individual accounts required solving such issues as registration of individuals in ZUS, registration of pension fund members, contribution collection mechanism and individual accounts identification. Final solutions adopted for those issues and the elements of the IT system are presented in the appendix.

### 3.4 *THE SECOND PILLAR*

Nine percentage points of salary net of contributions (7.3% of gross salary) is diverted to a pension fund chosen by the participant.

Each person can select only one fund. There is a free choice between the funds: they are not permitted to refuse entry or restrict the right to transfer to another funds, either directly or indirectly, through the imposition of charges.

A retiree will be mandated to buy an annuity. Annuities will be provided by specialised annuity companies<sup>35</sup>. The chosen option is similar to the one in Argentina, where the contribution collection is centralised and there is a link between the pension fund and the managing company. Differences occur in the disbursement period, as in Polish system there is a mandatory annuitisation, whereas in Argentina participants can either buy an annuity or go for the scheduled withdrawal option<sup>36</sup>.

#### *Regulation and supervision*

Licences are issued to both managing companies and pension funds by the pension-fund supervision office (UNFE). Pension fund managers must meet a number of requirements:

- a minimum of Euro 4m paid-up capital
- requirements for the probity of shareholders and board members of managing companies (for example, they may not be convicted criminals or in arrears with tax or social security payments)
- shareholders may not directly or indirectly hold stakes in more than one pension-fund company

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<sup>35</sup> The annuity law was not legislated by mid-1999, and it is possible that the final solution will be different.

<sup>36</sup> See L. Thompson (1999) and Rofman (1999)

- individuals holding influential positions in capital markets cannot serve as a director of a fund or work for the supervisory agency

Any changes to the fund manager's shareholders, board members, articles of association or custodian must be reported immediately to the supervision office. Initially, each company will be able to manage only one pension fund, except in the case of liquidation or merger, when more than one fund may be operated for a transitional period of a year.

The fund's articles of association must be submitted to the supervision office for approval. Any proposed amendments must be published five months before introduction, and again must be approved, except when a shorter period would be in the members' interest.

### *Pension fund operations*

Pension funds operate much as other open investment (mutual) funds. Contributions are converted into 'settlement units' (or a share of the fund) on a date of conversion, at least four times a month. This generates a relatively smooth flow of assets into the fund and prevent monthly cycles in securities markets because of periodic demand from funds. (There will be a substantial surplus of contributions over benefit withdrawals for at least 20 years.). The settlement unit is valued daily and published in major newspapers.

The fund's value is assessed primarily on the basis of market prices, according to rules set by regulating decree and the supervision office. The balance on retirement will be calculated as the number of accumulated shares (or settlement units) multiplied by the unit value five days before the funds are withdrawn.

The legal form of pension funds. Pension funds are legal entities. This clarifies ownership, and the rights and obligations of participants and managers. The alternative — that the fund is commonly owned by the participants — would demand major modification of the joint property concept of the civil code. Currently, Polish law regulates trusts through contract law, but this does not adequately cover the relationship between beneficiaries and trustees. Having the fund as a single legal entity ensures that the property of the fund, the participants and the pension-fund company are all kept separate. It strengthens participants' rights in the case of insolvency of the managing company. Regulations affecting the managing company should not affect the fund's property.

Each fund is responsible for running individual accounts for its member. This can be performed either in-house or it can be contracted out. The decision depends on the pension fund managers. Most of the established funds, decided to contract-out this activity, to separate transfer agents that will handle databases of individual accounts of pension fund members.

Portfolio decisions. The investments of the pension funds are determined by each managing company, within investment limitations specified by decree by the Minister of Finance. Assets must be bank deposits or publicly traded securities, including securities issued or guaranteed by the treasury or the central bank (the National Bank of Poland) and investment funds. Funds may also invest in non-traded bonds, but not derivatives, except as a means of limiting exchange-rate risk in foreign investments.

Pension funds are not allowed to hold more than 5 per cent of assets in the securities of one issuer, except for mutual funds, short-term bank deposits and public-sector securities. This is designed to ensure a prudent level of diversification. To avoid possible conflicts of interest, the fund may not be invested in securities issued by a pension-fund company or its shareholders, as well as their controlled, controlling or associated entities. Funds are not allowed to invest in real estate or commodities.

Limits set out as to where they can locate their investments include: 40% in quoted stock, 5% in foreign securities, 10% in the secondary stock market, 10% in National Investment Funds (NFIs), 10% in National Bank of Poland papers and 15% in municipality bonds, 10% in close-ended investment funds, 15% in open-ended investment funds.

Starting on 1 January 2005, every pension company will be able to operate two types of fund. Type 'A' will invest as above, while type 'B' will be restricted to fixed-income securities. People approaching retirement age will then be able to select a lower risk fund, albeit at the cost of lower expected returns. An individual cannot split his capital between 'A' and 'B' funds.

Fee structure. A fund manager is allowed to charge two types of fees:

- a management fee from the fund's assets, that must not exceed 0.05 per cent of asset value per month (0.6 per cent annually) and the fee must be defined in the articles of association. Most of the funds in their articles of association decided to charge the maximum amount
- defined percentage commission deducted from contributions by the company, which must be the same level for all participants, with reductions permitted for contributors who stay longer. In early 1999 those fees amount to 7 to 9 per cent of the contribution and are usually reduced to around 5 per cent after two years of participation in the fund. The law does not specify a maximum value of this fee

Additionally, fund assets may only be used to finance some of the fund's operations, such as capital market activities and safekeeping of assets, including the custody fees. The goal is a transparent fee structure, to allow members and potential members to compare costs. The discount for long tenures in a fund is to discourage transfers.

The real rate of return depends on the length of participation in the fund (Table 4). For those who accumulate in the pension fund for 10 years, fees reduce their actual rate of return by almost 2 percentage points, while actual returns of those who save for more than 30 years is lower by approximately 1 percentage point. Taking this into account, people with shorter accumulation periods will not gain as much by switching to the funded pillar.

**Table 4. Impact of fees on the real rate of return**

Fees:	
Administration fee on contributions	6.0%
Administration fee on assets	0.6%
Rate of interest	5.0%
Real rate of return vs. years of savings:	
10 years	3.22%
15 years	3.63%
20 years	3.83%
25 years	3.95%
30 years	4.03%
35 years	4.09%

Assumption: flat earnings profile

Custody. The fund's assets must be held by a custodian or depository, selected by the fund and confirmed by the supervisory agency. The depository must be a bank with at least Euro 100m of assets and no capital affiliation with the pension-fund company. The national securities depository is also allowed to play this role<sup>37</sup>. The custodian is liable for damages resulting from the pension fund's failure to comply with legal requirements, and must inform the supervisory agency of any irregularity. This should guard against misappropriation of pension-fund assets, with additional security provided by the assets of the custodian.

Rate-of-return guarantee. Pension funds are subject to a relative rate of return guarantee, based on the average return of all pension funds. At the end of each quarter, the supervisory agency will calculate the average rate of return, weighted by size of fund, achieved for the last 24 months by all pension funds in operation. Any fund management company which fails to achieve 50 per cent or four percentage points (whichever is the lower) below the average nominal return for all funds will immediately make additional payments to the fund.

These payments will be made in the first instance from a special reserve of between one and three per cent of total fund assets, depending on the size of the fund. These assets are managed as an integral part of the fund. If the reserves are not sufficient, the fund manager is obliged to pay from its own assets. If the reserve and the assets of the fund-management company do not meet the shortfall in the return, then the fund manager will be declared bankrupt.

In the case of insolvency, the guarantee fund will make up the shortfall. The custodian will take over management of the assets and participants will then be free to choose another fund<sup>38</sup>.

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<sup>37</sup> In practice, however, none of the pension fund managers chose the national depository as custodian.

<sup>38</sup> From 2005, the returns for type 'A' and type 'B' funds will be calculated separately.

The relative rate of return mechanism in the Polish system has been somewhat relaxed compared to Latin American pension funds, as the rate of return is calculated quarterly based on rolling 24-month average (compared to initial Chilean monthly calculation based on 12-month rolling average<sup>39</sup>). However, it is argued by pension funds that this requirement discourages from investing in stock market, which is volatile in short-run and may affect the rate of return guarantee.

Guarantee fund. A separate guarantee fund will be established. It will be managed by the national securities depository. Guarantee fund assets come from pension funds payments and returns from accumulated assets. The total value of the fund cannot exceed 0.1 per cent of all pension funds net assets. A guarantee fund finances shortfalls in the minimum rate of return and other losses of a pension fund assets that cannot be attributed to the pension fund manager. In the case of the deficit in the guarantee fund, state budget covers all its liabilities.

Disclosure. Pension fund companies are obliged to inform both participants and UNFE of their activities. Participants have the right to a prospectus containing the fund's articles of association and the rights of fund participants (as defined by UNFE). They must also be told of changes in the prospectus and the financial results of the fund. Every 12 months and on demand, the fund must give participants a statement of account showing the number of units held and their total value.

Reporting to UNFE includes information about the state of assets and the results of investment policy. UNFE can also demand other information related to the fund's activity.

Pension-fund assets of married couples. Accumulated pension assets constitute a part of a married couple's common assets. In the case of divorce, the family and guardianship code will specify the division of assets. Assets will not be paid out, but transferred to the spouse's account with the fund.

In case of participant death, half of the assets will be transferred to the spouse's account with the fund. The other half will be paid as a lump-sum to beneficiaries specified by participant, or to the family members (spouse, children, grand-children, parents and siblings).

During the first 12 or so years after reform, a spouse who does not participate in any fund will be entitled to participate in a divorced or deceased participant's pension fund, unless he or she will have no right to participate in funds. In that case, the inherited funds will be paid as a lump-sum.

Transfers between funds. Transfers of all assets accumulated in one fund to another fund will take place only on the last day of each quarter. This allows a clearing-house mechanism for settlement of transfers out of funds net of transfers into a fund, restricting the need to sell assets to finance transfers. The clearing house will be the national securities depository, which already acts in this capacity for brokers.

If a fund member decides to change the fund earlier than 24 months after the enrolment, he will be obliged to pay a transfer fee to the fund he is leaving. The transfer fee

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<sup>39</sup> Currently Chile is discussing a change to 36-month rolling average.

depends on the number of months of the participation in fund and amounts from 40 per cent to 5 per cent of the minimum wage.

Taxation. Contributions are tax deductible, as in the first pillar. The fund's investment earnings are tax exempt. The profits of the pension-fund company are taxed. Assets transferred to claim pension benefits on retirement are not taxed. Only when participants begin to receive their pension will they begin to pay personal income tax on the benefits on a current basis. Thus, the second pillar has an expenditure-tax or EET (exempt-exempt-taxed) treatment.

Following the death of a participant, assets transferred to the spouse's account in a fund will be exempt from tax. These assets will be taxed when the spouse begins to collect benefits. In all other cases, such as payments to other beneficiaries, including close family members, the assets will be subject to an inheritance tax at 20 per cent rate.

### *Funded pension benefits*

According to the draft proposal, being sent to the Parliament, members must purchase an annuity from an insurance company when they retire (defined as the time they draw their first-pillar pension). Only licensed insurance companies will be allowed to participate. This market, too, will be regulated strictly, because pension assets will accumulate tax-free and the public sector will guarantee the benefits through an insurance guarantee fund (along the lines of the pension benefit guarantee corporation in the United States), that will ensure full payment of benefits in the event of an insurance company's bankruptcy, underwritten by treasury guarantee. The plan at time of writing is to require a licensed annuity company to meet the following conditions:

- fully paid-up share capital of at least Euro 25m required to obtain a licence (which can be increased as the discretion of the council of ministers depending on the insurance company's commitments)
- insurance companies offering annuities would not be able to sell other types of insurance
- annuity-company licences will not be issued until one year before the first participants reach the minimum retirement age (around 11 years after the implementation of the reform)
- in addition to prudential norms defined in the Insurance Act, the council of ministers should be able to introduce investment limits for insurers
- the state insurance supervision office (PUNU) would be able to monitor insurance companies' reserves and order capital increases and restrict investments as it sees fit

To protect the pension's purchasing power, benefits must be indexed at least to consumer prices, although indexation increases up to average wages growth would be permitted.

The annuity rate offered can vary only with the age of the purchaser. Annuity companies will be obliged to use the same life expectancy tables, not varied by gender, health or region. Companies cannot refuse to provide an annuity. All companies would have to offer a set of standard pension benefits as follows:

- single life annuities, paid until the death of the annuitant
- guaranteed (or survivorship) annuity, where benefits will be paid out for at least ten years, to the annuitant's survivors in the case of death during that period
- joint annuity, paid until the death of the second spouse, with survivors' pensions at least 75 per cent of the original annuity
- joint, guaranteed (or survivorship) annuity, where benefits are paid out for at least ten years, even in the case of the death of both spouses during that period

Longer periods of guaranteed benefits and different spouses' benefits will also be possible. However, all contracts must be lodged with the insurance supervisory agency (PUNU), which will have the right to prohibit certain contracts.

Individual annuities may only be sold with the written consent of the (uninsured) spouse. At the request of an annuitant, the insurance company is obliged to convert an individual to a joint life annuity. For example, if one spouse retires while the other continues working, the couple may choose to take a single life annuity until the second spouse retires.

### *Second pillar pension funds in 1999*

By June 1999 UNFE granted licenses to 21 pension funds and refused to give licenses to 3 companies. There are no other applications waiting, as newly established pension funds would not have a chance to win a significant share of the market. The first mergers are already expected, due to consolidation movements in the Polish banking industry<sup>40</sup>. Also smaller funds, that could breakeven are considering mergers.

The total size of the market is estimated at 11.5 million members, including 3.8 million people born after 1968, who are obliged to join a pension fund and 7.7 million people born between 1949 and 1968, who may participate in the fund on voluntary basis. The authors expect, that in total around 9 to 10 million contributors will join 2<sup>nd</sup> pillar funds (including both mandatory and voluntary participants). An inflow of 400 thousand new members annually is projected for subsequent years.

By end of August 1999 around 6 million people joined pension funds. The structure of the market is concentrated. The top 3 funds have around 70% of all pension fund members and the top 7 have 95% of the market. This situation will lead to a number of mergers and acquisitions in the pension fund sector in the future. At the end, there should be from 8 to 10 pension funds in Poland. However, the final shape and the size of the market will be known by the end of 1999, when everybody makes their decisions about participation.

Most of those who joined pension funds at the beginning of the year, were younger people whose participation in the pension funds is mandatory. However, they expressed their

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<sup>40</sup> The pension funds law does not allow one company to be a shareholder of more than one pension fund. Thus, any merger of two banks being shareholders of separate pension funds results in merger of pension funds. In mid-1999 two major wholesale banks – Bank Handlowy and BRE Bank – both being shareholders of separate pension funds announced merger. This must be followed by merger of the pension funds.

preferences by participating in selected funds earlier than required by law. Some people born between 1949-68 seemed to delay their decision until the end of the year and in the meantime, their contributions continue to flow into the social insurance fund and are registered on the individual accounts.

**Table 5. Age structure of switchers by the end of May 1999:**

	Men	Women	Total	% of age group
Born after 1968	787 514	942 163	1 729 677	45,2%*
Born between 1959-68	473 919	508 825	982 744	17,2% (total cohorts born between 1948-68)
Born between 1949-58	140 409	209 269	249 678	
Born between 1949-68	614 328	718 094	1 332 422	
Total	1 401 842	1 660 257	3 062 099	

Source: ZUS

\* Must choose 2<sup>nd</sup> pillar fund by end of September 1999

Note: By August 1999 the number of pension fund members doubled

By the end of July 1999, the structure of pension fund portfolios included 80 per cent in treasury bonds and other government-backed bonds and an average of 12 per cent in stocks and shares. However, this share varied across funds from 1.72 per cent to 24.67 per cent of total assets. For the first years of pension fund operations, the portfolio structure should be similar, as funds take into account the relative rate of return guarantee, which is encouraging them to invest in less volatile assets<sup>41</sup>. In the future, the share of portfolio invested in stocks should increase to provide significant diversification of retirement savings and prospects for better returns. Investment only in government bonds may not provide competitive net returns compared to the notional rate of return.

### 3.5 MINIMUM PENSION GUARANTEE

The new system has a guaranteed minimum pension, set at the same level as in the old system<sup>42</sup>. It will be paid at the retirement age to people who have contributed for a minimum of 20 years (women) or 25 years (men). This benefit will top up pensions (the sum of both first and second pillar) to the minimum level. It will be financed from general revenues, not from contributions to the pension system. This policy is designed to separate the redistributive role of the system from the lifecycle reallocation of income. It means that the financing of minimum pensions will be on broader tax base — including capital and transfer as well as labour income — than the rest of the pension system. This is contrary to the old pension

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<sup>41</sup> The first relative rate of return will be announced in two years time, when the fund members will be allowed to change a fund without a transfer fee.

<sup>42</sup> Since 1 July 1999 equal to PLN 451,11 (approx. 33% of average wage, net of contributions) monthly, indexed accordingly to general benefit indexation rules.

scheme, where minimum benefit was a part of the pay-as-you-go scheme, not a separate guarantee.

Due to the reduction of intragenerational redistribution in the new system, the number of pensioners covered by a minimum pension guarantee is expected to increase. If the indexation rules for the minimum benefit are the same as for other benefits, the share of pensioners covered by this guarantee is estimated to peak at 17 per cent in 2035 and gradually decrease to 7 per cent thereafter. However, close to price indexation of a minimum benefit would lead to reduction of its poverty protection role, as gradually it would become ineffective in reduction of relative poverty rates. If the minimum benefit was linked to a fixed percentage of average salary, the share of pensioners covered by this guarantee would likely remain at the level of around 15 per cent of all beneficiaries.

Most retirees covered by minimum guarantee would be low-income people with short working careers<sup>43</sup>. General revenue transfers to finance the minimum are estimated between 0.05 per cent of GDP if the indexation of minimum benefit follows general benefit indexation to approximately 0.1 per cent of GDP, if it remains equal to 30 per cent of average wage.

### 3.6 THE THIRD PILLAR

A voluntary third pillar will supplement the universal, mandatory part of the pension system (the first and second pillars). It will consist of a number of long-term savings plans and occupational-pension programmes. This makes the system more flexible, allowing each individual to reallocate income across the lifecycle according to their own preferences and needs. The third pillar is more flexible than the first two pillars, with choice over the timing and amount of saving and the ability to bequeath the capital without restriction.

Many employers already took out group insurance with a life insurance company, with the plans negotiated individually for each workplace. This insurance is attractive to employees because they avoid the information cost selecting from available products and assessing the risks of different insurers. Because of the pooling of risks among the employees of a particular company, the adverse selection risk for the insurer is reduced, so there is no need for individual medical interviews or health examinations. The cost is deductible for employers, but employees are taxed on the employer contribution as a benefit in kind. This system will continue as part of the employee pension programs.

Growing awareness of the uncertainty over the *real* solvency of the present pension system is the reason why employees are increasingly willing to agree to exchange current wages for future pension benefits. Group life insurance policies with a set time for benefit withdrawal with optional life insurance are becoming popular. Nevertheless, because it requires employers voluntarily to establish schemes, it is limited in scope.

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<sup>43</sup> In the Polish case mostly women with lower education, as they have shorter than average working careers and their salary income is lower than those of higher educated people and men in general.

### *The new occupational pension plans*

After the reform, employers will have the right to direct employee contributions to group insurance with a joint-stock or mutual life-insurance company, an occupational pension fund or to open investment funds.

An occupational plan must meet the following criteria

- all eligible employees have an opportunity to participate
- eligibility conditions can only cover the employee's tenure in the company and at least half of employees must be eligible
- payments on behalf on an individual employee cannot exceed seven per cent of earnings assessable for social security contributions
- benefits be paid out from age 60, except in cases of death or permanent disability

The detailed rules for the functioning of an occupational plan must be defined in a company pension contract negotiated with employees' representatives.

Contributions paid on behalf of the employee will be a deductible expense for the employer. They will be included in personal income when the employee is taxed, but up to the seven per cent ceiling, they will not be subject to social security contributions. Additional contribution can be paid by employees, but it is neither income tax nor social security contribution deductible.

Although the terms of group insurance or payments to investment fund will be negotiated between the employer and the plan management company, there will be some legal requirements to qualify as an employee pension programme.

Occupational pension funds will operate along similar lines as second-pillar schemes. However, there will be fewer portfolio restrictions, no minimum rate of return, more influence for participants on the fund's investment policies, including the possibility of investing all the assets in an open investment fund.

In the case of setting up an employee pension fund, the employer is also able to make employee participation depending on the contribution of a (uniform) proportion of the company's shares received during privatisation of the enterprise within five years. This limits the risk that a large part of the company's shares return to the market following an initial public offering after the two-year waiting period imposed on employees. This overhang of shares is a significant fear among potential investors.

The legislation also aims to make occupational pensions portable when employees change jobs. The employee will have the right to transfer the assets to the pension plan of the new employer or to an insurance company, open investment fund or a non-employer-sponsored plan.

### *Regulation, supervision and taxation*

Since the third pillar involves a range of different institutions, supervision will be spread across different authorities: bank supervisors, the state insurance supervision office (PUNU) and the securities and exchange commission (SEC). The pension-fund supervision office (UNFE) will cover employees' rights in occupational schemes.

The third pillar will be taxed using the pre-paid expenditure tax approach, where contributions are made out of taxed income, but investment returns and benefit withdrawals will be tax free (*i.e.*, taxed-exempt exempt or TEE). Although this means a similar or even the same present value of tax will be paid, it brings forward the revenues to government to the time contributions are made rather than the time benefits are received (see Whitehouse, 1998).

### **3.7 ESTIMATED BENEFITS FROM THE MANDATORY PILLARS**

The actual value of the benefit from first and second pillars depends on the development of labour and financial markets. In this section, we provide some estimates of the value of pensions for different cohorts covered by the reform, as well as for different assumptions of wage growth and financial market returns.

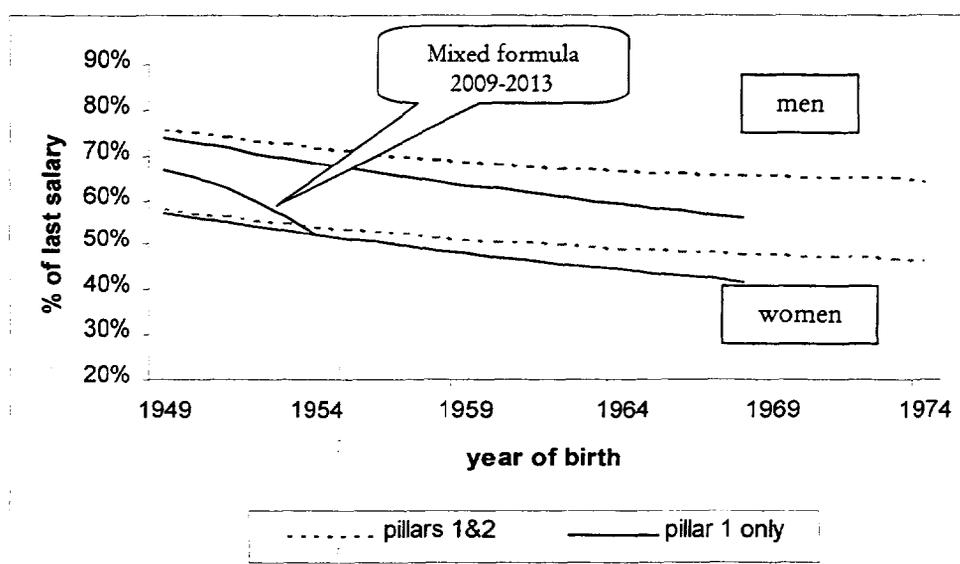
Replacement rates are constant for people with different wage levels, up to the maximum earnings cap, assuming that the relative ratios of individuals' wages to average wage are constant over the contribution period. Projections are based on average wage earners, but the same estimate applies to other levels of earnings (up to a maximum earnings cap).

The baseline assumption set for calculations includes:

- Average wage earners, starting career at age 25
- Average wage growth: 4%, thus notional rate of return 3%
- Rate of return from funded pillar: 6%
- Administrative fee from contributions: 5%
- Administrative fee from assets: 0.6%
- Annuity company fee: 6% of balance at retirement
- Rate of return on annuity: 2%
- Current life expectancy.

In the transition period, the replacement rates (measured as a ratio between the first benefit received from the old-age system and the last salary) depend not only on the development of the new system after reform implementation, but also on the value of the initial capital. Thus, replacement rates change for each cohort, as presented in Figure 6.

**Figure 6. Projected replacement rates in the new pension system, cohorts 1949-74**



Due to differentiation in retirement age, replacement rates differ for men and women. The difference between the genders is stable at the level of approximately 20 percentage points, which results from 5 year difference in retirement age. Additionally, for women born in 1949-1953, adjustment in mixed formula causes increase in replacement rates, compared to the initial proposal.

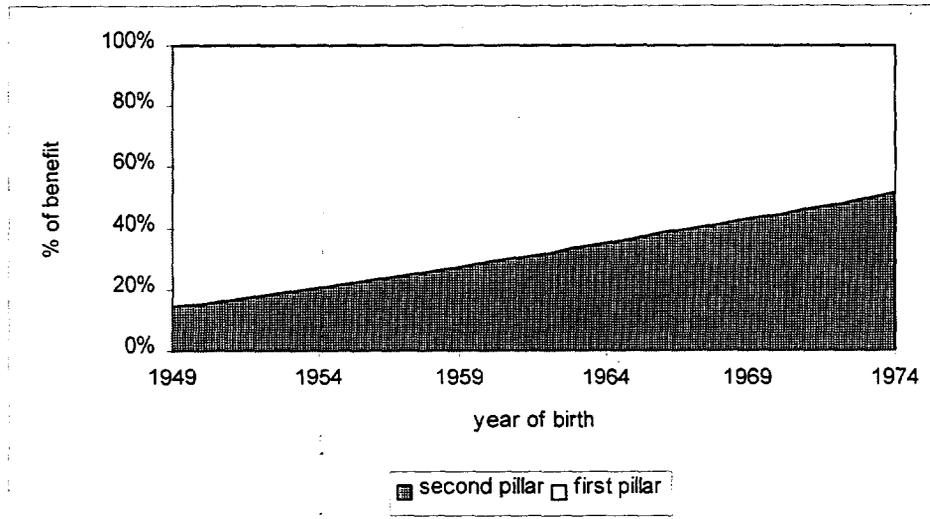
For men, replacement rates drops from 76 per cent in the old system, through almost the same level for the cohort 1949, to approximately 60 per cent for new entrants to the system. For women, replacement rate drops sharply from almost 70 per cent in the old system to slightly above 50 per cent for cohort 1954 (first that is not covered by a mixed pension formula), then decrease is more stable and projected replacement rate for new entrants is below 50 per cent level.

Under reasonable assumptions, replacement rates are higher for those who decide to participate in the funded pillar. The gap between first pillar only and first and second pillar participation increases for younger people, as returns from financial market are assumed to be higher than the notional return in the pay-as-you-go scheme. For the youngest cohort with non mandatory participation in the funded pillar, difference in replacement rates is approximately 10 per cent

The other element that depends on the age of participants in the system is the share of the benefit generated by the funded component. Obviously, it will be increasing for younger participants. The increase however, does not reflect the share of contribution diverted to the second pillar. For the cohort born in 1949, the estimated share of the second pillar annuity in the total benefit reaches 14 per cent and increases year by year to exceed 50 per cent for new entrants (compared with 32.5 per cent of old-age contribution shifted to the second pillar). The estimates do not take into account changes in the real benefit value in first and second pillars, that occur due to the indexation of benefits. Draft annuity law enforces annuity

indexation at least to prices, whereas in the first pillar, indexation should not be lower than 20 per cent of real wage growth.

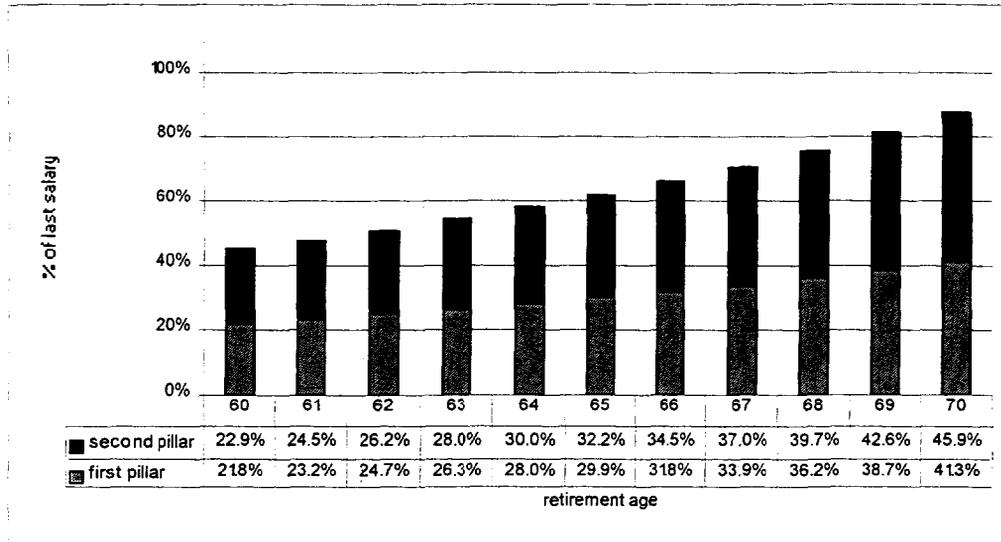
**Figure 7. Share of funded part in total benefit, cohorts 1949-74**



Note: First pillar share refers to sum of initial capital and accumulated notional contributions.  
Contribution rate assumed to remain constant

As the benefit formula is actuarially adjusted, replacement rates increase with the retirement age. A person starting to work at age 25, and continuing until retirement without any breaks can expect a replacement rate of around 44 per cent at the age of 60, 62 per cent at the age of 65 and finally, almost 90 per cent at the age of 70. The marginal increase in replacement rates also depends on the retirement age and varies from 2.5 per cent for 60 year olds to more than 5 per cent for 70 year olds. Thus, both first and second pillars benefit formulae encourage postponing retirement decision, offering higher replacement rates year by year. This does not necessarily mean that the net present value of the benefit increases for each additional year, as individual's preferences may differ.

**Figure 8. Projected replacement rates in the new system**



Assumptions: see text

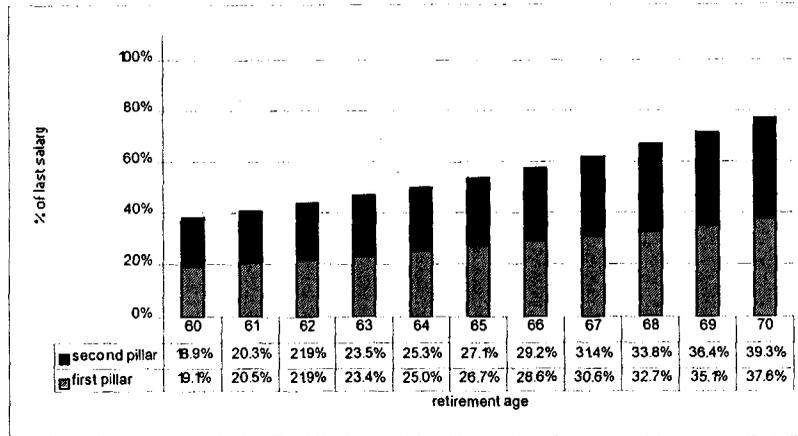
Estimates of the replacement rates are sensitive to assumptions. In order to investigate the influence of work duration, longevity rates and rates of return, we projected benefits with alternative scenarios (Figure 8). If a working career is 5 years shorter than in the initial projection, the replacement rates are reduced by 6 to 10 per cent, depending on the retirement age and they fall to the level of 40 per cent for retirees at age 60 to 77 per cent for those who retire at 70.

In the case of higher gross returns (8 per cent, compared to baseline 6 per cent), replacement rates increase by 10 to 28 per cent for 70 year old retiree and range from almost 55 per cent to 115 per cent. Also, the share of funded component in the initial value of benefit increases to 62 per cent for 65 year olds.

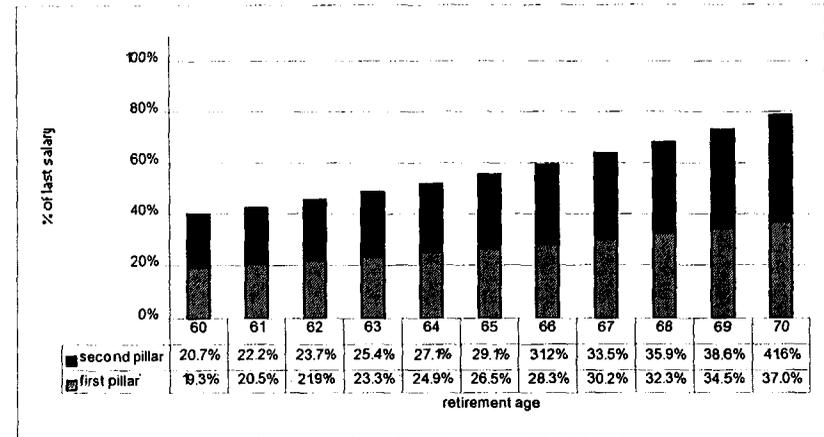
Changes in longevity also have an impact on replacement rates. If life expectancy increases by approximately 2 years, replacement rates are lower by almost 5 to 9 per cent and fall to 40 per cent for those retiring at 60 and 78 per cent for 70 years old.

**Figure 9. Projected replacement rates in the new system – sensitivity analysis**

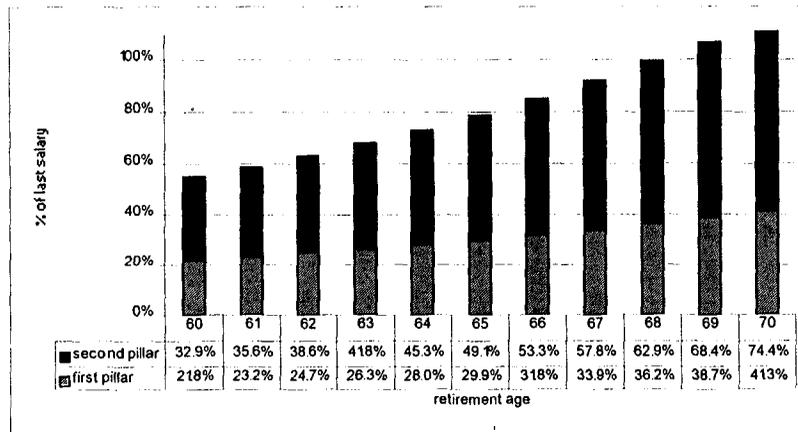
**9a. Shorter working career**



**9c. Increased longevity**



**9b. Higher market returns**



**9d. Replacement rate changes compared to baseline**

Age	Shorter career	Return in 2 <sup>nd</sup> pillar	increased longevity
60	-6.6%	10.0%	-4.7%
61	-6.9%	11.1%	-5.0%
62	-7.2%	12.4%	-5.3%
63	-7.5%	13.7%	-5.7%
64	-7.8%	15.2%	-6.1%
65	-8.2%	16.9%	-6.4%
66	-8.5%	18.8%	-6.8%
67	-8.9%	20.9%	-7.3%
68	-9.4%	23.2%	-7.7%
69	-9.8%	25.7%	-8.2%
70	-10.3%	28.6%	-8.7%

### 3.8 *EARLY RETIREMENT AND SECTOR PRIVILEGES*

The reform aims to eliminate all privileges in the old universal pension system, with equal treatment of all participants with regard to retirement age, means of paying contributions and calculating benefits. Sector privileges were largely an inheritance from the planned economy era — many were introduced in the 1980s during the period of martial law — but some had a much earlier provenance (railway workers were given privileges by the Austro-Hungarian emperor in the 19th century). It is estimated, that approximately 24 per cent of the workforce enjoyed some kind of special privilege. Additionally, women could retire at age 55, if they had at least 30 years of work experience. Successful elimination of all privileges would improve the pension system's finances enormously. The 'cost' of early retirement alone is equivalent to 12 percentage points of the total 45 per cent contribution.

The problem of privilege-based early retirement is compounded by the possibility to continue working after drawing early pensions, almost without restriction. There is a strong incentive to take the early retirement pension, but then continue to work. This was for example the case of teachers. Most of them after retirement continues working at schools, receiving both salary and old-age pension.

In the new system, first and second pillars do not include any special privileges as pensions will be paid for those reaching the minimum retirement age.

For those, who work in special conditions, that cannot be performed until retirement age, the period of permissible time of work will be sanctioned in law. After this period a worker will have to change his/her work position or profession and could be provided by help in finding a new work or in changing the qualifications. The medical criteria to acknowledge certain working conditions as 'special' were presented in the report of an independent Medical Committee. On the basis of the statistical and medical data, the Medical Committee determined for selected jobs a maximum period of work, which will not cause a detriment of health in particular professions and positions<sup>44</sup>.

For the transition period, for those who started their working career before 1999 and could expect early retirement another solution is envisaged.

All those, who stay in the old system (i.e. born before 1949) will have a right to retire at lower retirement age and their pension will be calculated according to old rules. Additionally, also those working in professions eligible to lower retirement age (provided they work there until they reach stated earlier retirement age), born between 1949 and 1968, who:

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<sup>44</sup> Plenipotentiary, Ewa Lewicka asked leading home institutes and international organizations to delegate experts, who could participate in the work of independent committee. The committee presented its report in April 1999.

- fulfill all three conditions (age, total working period and working period in special conditions) until 31 December 2006 will be eligible to earlier retirement according to the old rules (this applies also to women)
- on January 1, 1999 had fulfilled two conditions related to work experience, but they will not have required age until 31 December 2006 will be entitled to earlier retirement age but their pension will be calculated on the basis of the new formula. Initial Capital of such people will be increased by adding to contributable periods the difference between the general retirement age and their retirement age. *E.g.* Pension of the person that will retire 5 years before legal retirement age will be calculated as if that person worked 5 years longer than actually did. The old-age pension of such person will be lower than that of a person retiring at minimal retirement age with the same notional capital value.

If somebody chooses earlier retirement on the basis described above, he or she will not be permitted to join the second pillar. Second pillar arrangements are not suitable for solving rights from the old system. People that decide to participate in one of the capital pension funds (2<sup>nd</sup> pillar) automatically forfeit the right to earlier retirement.

All of these groups have the right of choice. The final shape of the solutions is discussed between representatives of government, employers and trade unions, which aim to prepare additional solutions coping with special working conditions.

For giving up the right to earlier retirement, employees can join a pension fund pillar, continue working until legal retirement age and additionally have financial compensation – in different forms depending on the list of professions requiring earlier cessation of the activity, similar to those, who do not have a right to retire earlier.

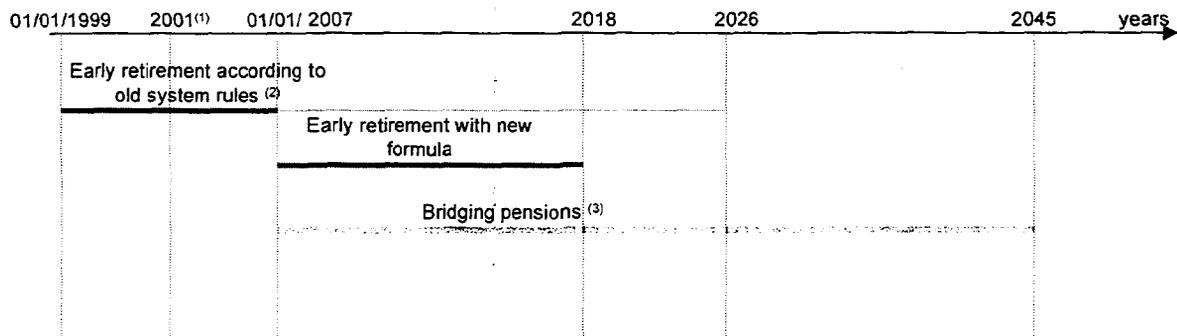
Those born between 1949 and 1968, who did not fulfil required conditions at the moment of the beginning starting reform will not have right to retire earlier in the new social insurance system. Instead they will be offered one of the two compensations below:

- If the Medical Committee decided that the job performed by these people requires earlier cessation of professional activity (e.g. miners, pilots, train drivers) special bridging arrangements will be created, which allow them finish their professional activity earlier. Sources of financing such a solution will be subject of negotiations. It will not be allowed to combine this benefit with employment
- If the profession will not be on the list worked out by the Medical Committee, employees will receive compensation based on the fact, that this job was recognized in old system as a profession requiring earlier retirement age. The initial capital will be increased in the first pillar of a new system, and this will lead to a higher pension in the future at the normal retirement age (e.g. teachers, railway company employees)

Bridging pensions will be financed from separate contributions accumulated in a special fund, called the 'bridging pensions fund'. The fund will pay a 'bridge' pension from the earlier age at which working career is finished to the minimal retirement age. The additional contributions from the day when the bridging pensions law is enacted will be financed by employers, while the contribution representing the rights accrued in the past will be paid from

the state budget. This will make the trade-offs in granting special privileges clearer. The bridging fund management will be contracted out to private asset managers. This system will be accessible for those, who work in conditions, which by medical criteria cannot be performed until retirement age because of the threat of health loss (e.g. working underground, underwater or in changing microclimate) or because they require high psycho-physical condition (e.g. pilots, engine drivers). Bridging pensions would be set up as a defined benefit scheme. The actual value of the benefit will be negotiated between employers, trade unions and government.

**Figure 10 Calendar of early retirement scheme withdrawal**



(1) Assumed enactment of bridging pensions law;

(2) It is enough if a person fulfills conditions prior to 2007, and then can retire even later;

(3) Maximum bridge: 20 years, this includes also people that undergo retraining;

Assumption: work career starts at age 20

Negotiations of bridging pensions started in June 1999. At the time of writing, they were still continuing, thus it is not possible to give any reasonable financial estimates of required benefit level and state budget financing, as the level of bridging pensions is not known. This decision will determine the actual rate of employer and state budget contributions necessary to finance bridging pensions. Additionally, until the individual accounts in ZUS are established, there is no information on number of people covered by special arrangements (both bridging pensions and initial capital compensation).

The envisaged solution will increase the overall costs of the pension expenditures, as state budget will be required to make additional transfers to bridging pension fund and pensions paid for those who will receive compensation will be higher than assumed in projections. Because of the lack of appropriate information, these effects are not included in the projections presented in further sections of this paper.

#### 4. PAYG system - financing the transition<sup>45</sup>

The pension reform had a significant impact on the functioning of institutions of the social security system. Starting from the first year, it also affects the revenues of the pay-as-you-go scheme, as part of the old-age contribution is transferred to the funded pillar. This effect depends on the size of switching to the second pillar. The more people decide to switch, the deeper cash-flow deficit in the short term. Savings caused by the pension reform appear only in medium-term perspective, as old system rules are preserved by the end of 2006. Savings generated in the short run result from close to price indexation of benefits, introduced in 1994 (see section 2). Savings resulting from increase in retirement age and reduction of benefits appear after 2006. The level of savings is lower than initially expected, due to several transition regulations which were introduced in the legislative process.

This section analyses both changes resulting from the introduction of the funded component in retirement savings and financial implications of transition rules in the enacted regulations.

##### 4.1. JOINING THE SECOND PILLAR

Voluntary participation in the second pillar for people born between 1949 and 1968 introduces an element of choice, which is socially, economically and politically desirable (Palacios and Whitehouse, 1998). However, this raises the problem of predicting how many people will choose different options and makes it more difficult to get a clear picture of long-term obligations (Holzmann, 1997).

Predicting the decisions of people aged between 30 and 50 on whether to switch from the first pillar to the mixed first and second pillar option is a difficult task. One possible source of information is opinion polls. These suggest that most people will choose to join the second pillar. A second source is experience in other countries, of which the most relevant is Hungary<sup>46</sup>. Opinion polls there suggested people were very optimistic about funded pensions

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<sup>45</sup> Projections and forecasts presented in this paper are based on enacted legislation and long-term proposals included in pension reform program (such as lowering contribution rates). For the short and medium-term analysis we used Social Budget Model, prepared in Gdansk Institute for Market Economics in co-operation with ILO and Polish Ministry of Labour and Social affairs. It produces 20 year forecast of all social funds, including pension system, based on final legislation outcome.

For long-term projections a model prepared in the Office of the Government Plenipotentiary for Social Security Reform is used. This allows for comparison of initial proposal and final version of the pension reform legislation package.

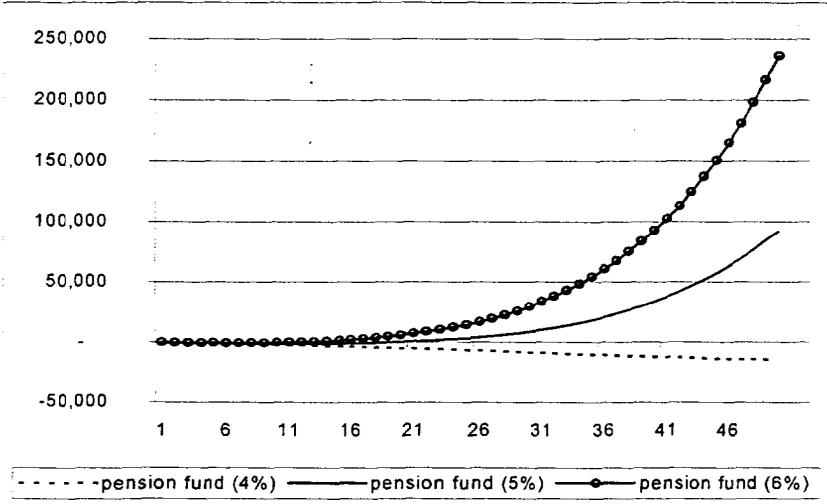
<sup>46</sup> However, there are significant differences between the new pay-as-you-go pillars in Poland and Hungary. In Hungary, it remained within defined benefit regime, downsized for those who switch to the pension fund. In Poland, regardless the decision, contributors are covered by the NDC first pillar.

and pessimistic about the state scheme (see Palacios and Rocha, 1998 and Palacios and Whitehouse, 1998).

In order to analyse incentives towards switching, one has to analyse the return on 7.3 per cent of contribution in the first and second pillar, taking into account such elements as wage growth and notional account indexation, projected market returns, pension fund and annuity company fees (as discussed in section 3.3, fee structure in Poland affects to a higher extent pension fund members with shorter savings periods).

Decision whether to switch or not depends on a difference between the projected accumulated capital from 7.3% contribution in the first and second pillar accounts, given anticipated returns on contributions. Projected differences between first and second pillar value of accumulated pension rights or capital are presented on Figure 11.

**Figure 11. Difference between Polish NDC and funded schemes accumulation**



- Assumptions:  
 Wage growth: 4%  
 Notional interest rate: 3%  
 Administrative fee on contribution: 6%  
 Administrative fee on assets: 0.6%  
 Annuity company fee: 6% of accumulated assets

According to projections, if gross returns in the funded pillar are equal to wage growth, it is not worth switching, because the notional rate of return (after costs) is higher. Generally, international evidence shows, that in the medium term, returns of private pension funds are higher than wage growth<sup>47</sup>. If it is the case in Poland – the breakeven point depends on the difference between the wage growth and rate of return. In the case of one per cent difference, it is 18 years, if the difference is 2 per cent, than this period shrinks to 11 years.

<sup>47</sup> See: Palacios (1999) and OECD (1998) for 1984-1996 rates of return and wage growth.

However, in either case the difference between first and second pillar accumulated assets is not that significant for those with shorter accumulation period from the annuity point of view (projected difference in the annuity value is less than PLN 20 (approx. USD 5) per month. If the differences between the value of the annuity in the first and second pillars do not differ significantly, people for diversification reasons should participate in the second pillar. If the expected market gross rate of return is higher than the notional rate of return, all those who do not have any early retirement privileges should switch.

The incentive to switch is higher than assumed in earlier analyses<sup>48</sup> due to the reduction in the notional rate of return below wage bill growth. Such regulation affects to a larger extent those who will not switch, because their full old-age contribution will be indexed at a lower rate. Those who switch will earn full financial market returns on their contributions in the second pillar. As a result, more switching will take place and this will increase short run social security deficit.

The financial effect of switching in 1999 is lower than in later years however, because of the time schedule of switching decisions. Until one switches, his full contribution remains in the pay-as-you-go pillar, increasing the notional capital and therefore pay-as-you-go liabilities<sup>49</sup>. As a result, the pace at which people switch to the second pillar has a large impact on the finances of the system. During the first months of pension funds enrolment, the number of pension fund members increased by approximately one million per month (in the period of March – August 1999 total of 6 million participants).

In order to estimate the financial impact of switching decisions to PAYG pension system deficit, two projections of participation were prepared (Table 6). One assumes that everybody who is entitled switches, and the other assumes that participation will decline with age. The latter bases on the fact that compound-interest effect means that younger workers will get a higher return from the funded pension, and so have a larger incentive to switch. This age-related pattern also occurred in all other countries introducing a reform involving some element of individual choice: Argentina, Chile, Colombia, Hungary, Peru, the United Kingdom and Uruguay (Palacios and Whitehouse, 1998). However, in the discussed examples switching population covered all age cohorts, while in the case of Poland, switching is limited to those below 50 years of age and people who have a choice still have at least 10 years of contributing ahead.

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<sup>48</sup> *Security through Diversity* (1997c)

<sup>49</sup> From the year 2000, the new entrants to the labor market are forced to switch within 3 months. During the decision period, the contribution is kept on the separate account, and after they choose a fund, the nominal contributions are transferred to the selected pension fund.

**Table 6. Projected pension revenues and expenditures, transfer to pension fund and reserves in 1999-2006 (% GDP)**

YEAR	1999	2000	2001	2002	2003	2004	2005	2006
50% of switchers								
Pension revenues	5.64%	5.14%	5.14%	4.78%	4.75%	4.73%	4.70%	4.67%
Pension expenditures	5.92%	5.75%	5.59%	5.42%	5.25%	5.09%	4.95%	4.82%
<i>Deficit / surplus</i>	-0.28%	-0.62%	-0.46%	-0.64%	-0.50%	-0.36%	-0.24%	-0.15%
2nd pillar transfer	0.53%	1.22%	1.36%	1.49%	1.61%	1.73%	1.86%	1.97%
100% of switchers								
Pension revenues	5.19%	4.37%	4.38%	4.05%	4.04%	4.05%	4.06%	4.06%
Pension expenditures	5.92%	5.75%	5.59%	5.42%	5.25%	5.09%	4.95%	4.82%
<i>Deficit / surplus</i>	-0.74%	-1.38%	-1.21%	-1.37%	-1.20%	-1.04%	-0.89%	-0.76%
2nd pillar transfer	0.85%	1.89%	2.05%	2.20%	2.33%	2.46%	2.58%	2.68%

Source: Social Budget Model

If the number of switchers turns out to be higher than assumed by the Polish government (roughly 50%), the deficit in the Social Insurance Fund (FUS) will be higher than claimed. According to the social insurance law, it must be covered from the state budget. Given the constrained budget deficit, other budgetary expenditures would have to be reduced<sup>50</sup>. The final outcome, however, will not be known until the end of the 1999, when the switching process has ended.

If participation exceeds expectations, the effect will not be disastrous. As argued in the original *Security through Diversity* proposal, much of the revenue diverted to funded pensions will return to the state treasury through increased demand for bonds, allowing non-inflationary financing of the increased deficit. The other part will be invested in the capital market. In other words, higher household saving offsets the reduction in public sector net saving. These arguments were supported by the OECD's (1998) analysis of the reform in its economic survey of Poland. In 1999 international rating agencies increased country rating for Poland partly as a result of pension reform introduction.

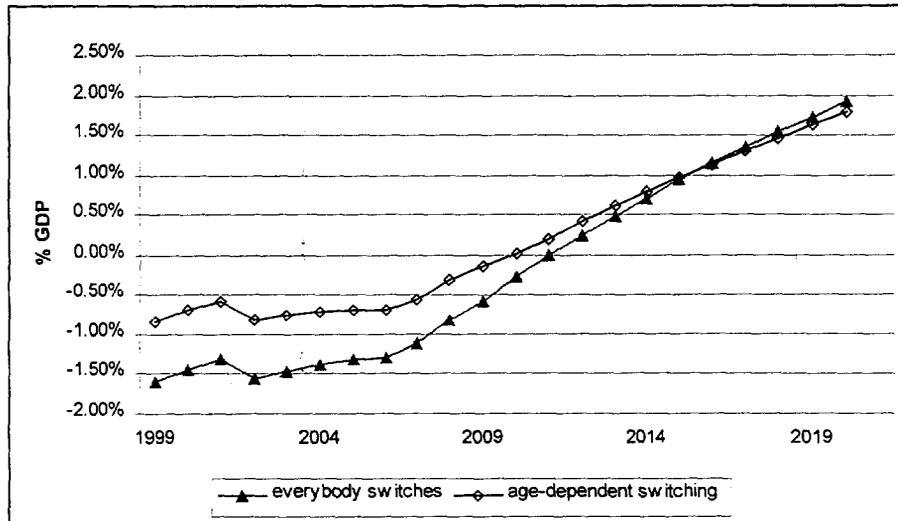
Privatisation revenues will be used to help finance the deficit in the social-security system, as specified by the first part of the pension reform package (1997). According to the treasury's plans, PLN 53bn will be available to support the reform (about 14 per cent of GDP), with PLN 4bn allocated in the 1999 budget. This amount will be sufficient to fill the gap in the Social Security Fund, even if more people than initially estimated by Polish government switch to the pension funds.

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<sup>50</sup> According to both the Polish constitution and the Maastricht criteria, the state budget deficit may not exceed the limit of 3 % of GDP. According to 1999 state budget, the deficit should not exceed 2.4 per cent of GDP. The Polish government agreed in July 1999, that next year's figure should be less than 2 per cent of GDP.

The deficit in the pay-as-you-go retirement scheme is expected to decrease, due to reduction of expenditures caused by earlier changes in indexation of benefits and by reduction of early retirement policies in the new system. As a result, after 2010 the public scheme should have a surplus. The projected surplus is smaller in the case of higher switching and appears in 2012.

**Figure 12. Deficit/surplus in the PAYG old-age pension fund in 1999-2020**

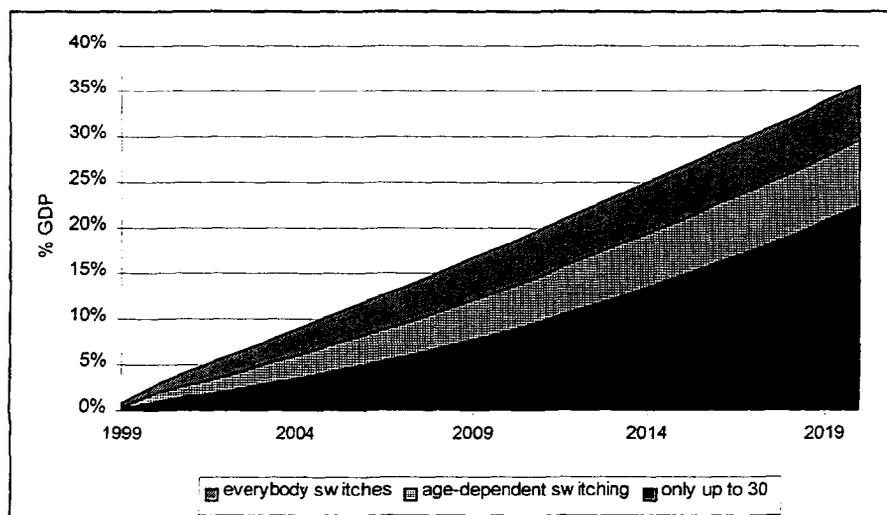


Source: Social Budget Model

As the deficit in the pay-as-you-go scheme is financed from privatization proceeds, and in the case of deficit, mainly from taxes (given state budget deficit constraints that cannot be exceeded), the projected deficit figure ignores accumulated interest in the assumption that it is not debt financed.

The switching decision has a significant impact on pension funds' asset accumulation. In 2020, depending on the number of switchers, total value of accumulated assets may vary from 23 per cent of GDP to 35 per cent of GDP (Figure 13).

**Figure 13. Accumulation of assets in Polish open pension funds, 1999-2020**



Source: Social budget model

As only a small fraction of assets can be invested abroad, accumulation of pension funds will strengthen the Polish financial market. Pension funds are expected to create the strongest group of institutional investors, as other forms of savings are not that developed, due to voluntary participation. As up to 40 per cent of assets can be invested in stocks, the Polish securities market is expected to increase its volume. This process will be accompanied by increased privatization, as privatization proceeds will be needed to finance deficit in the pay-as-you-go pillar. Pension fund managers plan to invest a significant share of assets into government bonds, which is merely a change from implicit debt to explicit one. Even this effect can positively influence Polish economy, as budget deficit cannot exceed 3 per cent of GDP threshold. In a long run, Polish market will not be able to absorb capital flows generated by the pension funds. Thus, changes in investment limitations in the area of international diversification will be required. Additionally, as a part of EU accession process Poland would need to adjust the financial market regulations on capital movements.

#### *4.2. EARLY RETIREMENT SCHEMES AND IMPACT OF PHASING-OUT RULES*

Another important element that had an impact on medium-term expenditures are the changes to the initial reform proposal, mostly related to early retirement privileges. In the final regulations, there are three major changes compared to the initial reform proposal, all aimed to smooth the transition between the old and the new system. Those changes create additional expenditures for the pension system. They include:

- a right to retire according to old-rules for those who accrue pension rights to the end of 2006. This regulation covers: women born in 1949-51, retiring at age 55, miners with more than 17 years of work experience under ground (can retire after 25 years of working) and teachers with 25 years of experience (can retire after 30 years of working) – introduced during the consultations in Tripartite commission;

- a right to retire at early retirement age after 2006 for those who fulfilled work experience criteria (20(w) or 25(m) years of working, including 10 to 15 in special conditions) prior to reform introduction. This regulation covers part of women older than approx. 38 and men older than 43 – introduced during Parliamentary discussions;
- mixed pensions for retirees in 2009-2013. This increases replacement rates for the mentioned groups – introduced during Parliamentary discussions.

Relative to the initial reform proposal, these changes have an impact on both expenditures and revenues of the old-age system. This impact can be observed, according to projections between 2003 and 2020 (Figure 14). Prior to 2003, there are no changes in expenditures, because all people above 50 years of age are covered by the old system regulations. The revenues of the pension system depend on the number of switchers. Projections in this section assume that the switching process depends on age and approximately half of the contributors born between 1968 and 1949 decided to switch.

The most significant differences in the pension system balance between the initial proposal and legislated solutions can be observed in the period between 2003 and 2009, after that the differences become smaller, as cohorts covered by reform start to retire according to legal retirement age (60 for women and 65 for men).

Transition rules implemented in the Polish legislation have only a medium term impact on the stability of the PAYG pension system. This increased expenditure will create additional seven years of deficit in the old-age pension fund. The annual deficit in the period, however, should not exceed 1 per cent of GDP (unless more people switch to the funded pillar). This is mainly a result of favorable situation in the labor market and growth of the covered wage bill. This happens for two reasons. First is the expected growth of wage bill above GDP growth, a result of increasing wage bill/GDP ratio<sup>51</sup>. In 1998 it was equal to 33 per cent and by 2020 it is expected to rise to 40 per cent. The second reason is an increase in labor force supply, as a generation of 1980s baby-boom is entering to workforce<sup>52</sup>.

The drop in the old-age pension system revenues observed in 2002 is related to the transfer of the part of the old-age contribution to the demographic reserve fund, as a precaution against worsening balance of the system after 2020, caused by rapid increase of dependency rates.

As discussed earlier, the pension reform introduces savings in expenditures after 2006. According to projections, the old system would run deficits after 2015, while the reformed system in the its final shape starts to create surpluses in 2011.

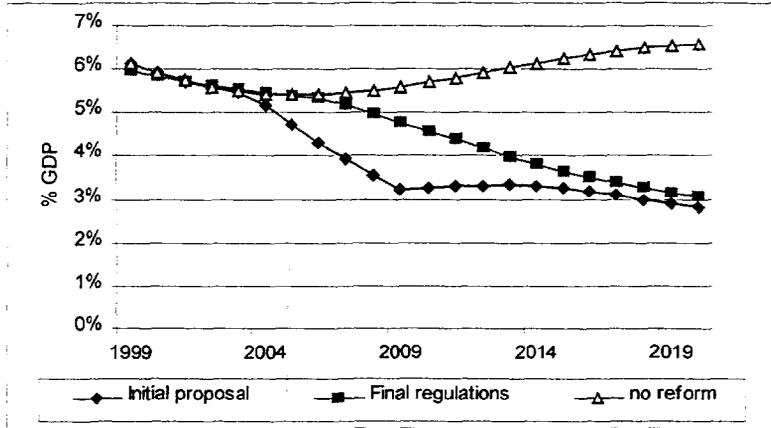
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<sup>51</sup> Stemming from increase in labour productivity and broadening the contribution base. For example, in Poland, company cars are not covered by social insurance contribution, which is expected to be changed in the future.

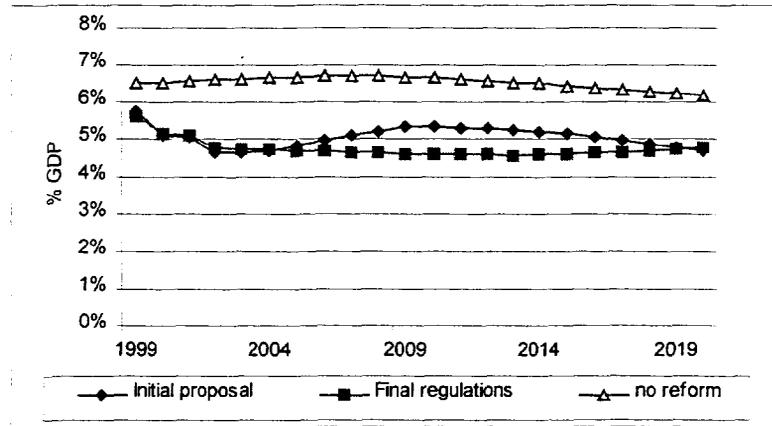
<sup>52</sup> This demographic wave was quite significant in Poland, because of the marshal law in the early 1980s. During these period Poland experienced very high fertility rates, partially explained by introduction of the curfew after 8 p.m.

**Figure 14 Medium-term impact of final pension rules vs. *Security through diversity* proposal**

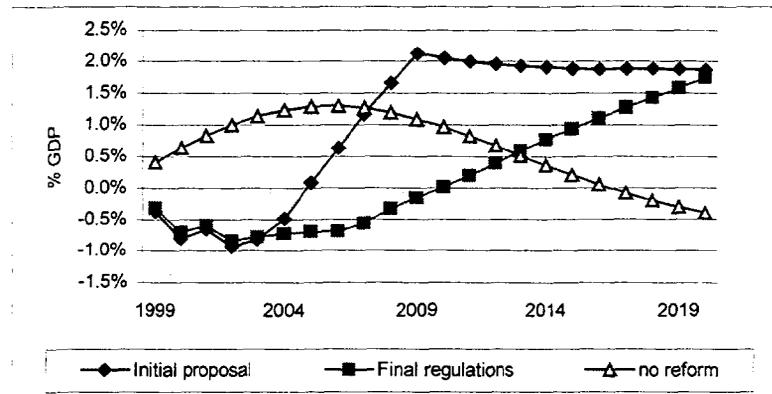
**14 a. Expenditures of the PAYG old-pension fund (% GDP)**



**14 b. Revenues of the PAYG old-pension fund (% GDP)**



**14c. Deficit/surplus of the PAYG old-pension fund (% GDP)**



Source: Social Budget Model (final regulations), Office of the Government Plenipotentiary for Social Security Reform (initial proposal, no reform)

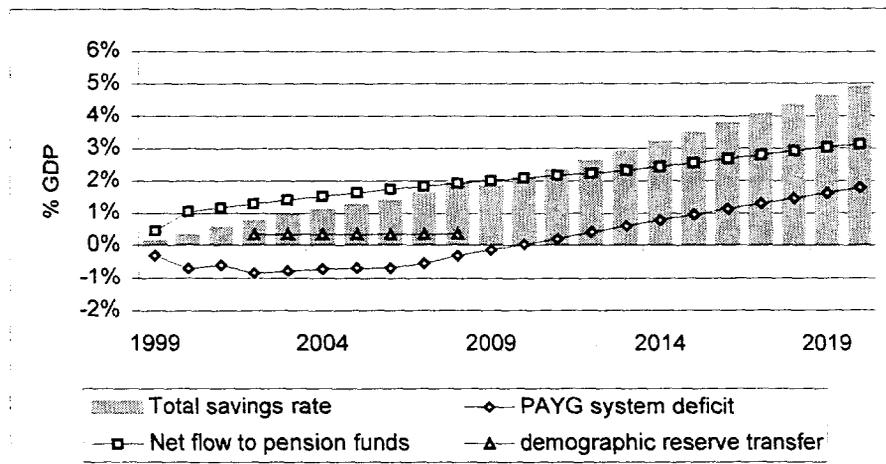
### 4.3. OVERALL SAVINGS RATE IN THE PENSION SYSTEM<sup>53</sup>

The impact of pension reform on national savings has several sources. These are private savings accumulated in pension funds and public savings in PAYG pension system, that according to projections appear after 2011. Figure 15 shows the combined impact of the two elements on the total savings rate. The additional transfer to demographic reserve fund is also presented. This transfer does not generate any savings in the economy, as it increases PAYG system deficit in 2002-2008, however because those funds are invested in the capital market, it may have some impact on public savings, given state budget deficit constraint.

In the projection period, the total savings rate is positive already in 1999. This is a result of expected surplus in the pay-as-you-go system without any transfer to the funded pillar. Thus, combined public and private savings reflect this surplus. Savings generated by private funded pillar increase annually, as more contributors participate in pension funds. By 2020, the expected net inflow to the second pillar reaches 3 per cent of GDP. Savings increase significantly after 2011, when the pay-as-you-go pension fund reaches surplus. Overall annual savings rate grows from almost zero in 1999 to 5 per cent of GDP in 2020.

Savings in the old age system are presented as a gross flow. Pension reform introduces additional general revenue transfers to pay-as-you-go system, in the form of contribution for military service and maternity leave. These are estimated at the level of approximately 0.2 per cent of GDP annually. Also, after 2010 state budget will finance minimum pension guarantee for pensioners, which may decrease the overall savings rate by between 0.05 and 0.1 per cent of GDP<sup>54</sup>.

**Figure 15. Savings in the Polish multipillar pension system, 1999-2020 (% GDP)**



Source: Social budget model

<sup>53</sup> This section does not cover additional expenditures generated by bridging pension systems, as discussed in section 3.8

<sup>54</sup> Minimum pension for beneficiaries in the old system is financed from Social Security Fund, which is captured by overall deficit/surplus of the pay-as-you-go system.

## 5. Long term impact of pension reform

In order to evaluate overall impact of the pension reform on the stability of PAYG system, several projections were prepared. The baseline situation is based on the current legislation and long-term goals of the pension reform. Assumptions in the baseline scenario include:

- GDP growth of 3.5% annually
- decrease in contribution rate to pay-as-you-go pillar from 12.22 per cent to 7.3 per cent between 2013 and 2030
- retirement age at current level – 60 for women and 65 for men
- increase in longevity to current Swedish rates by 2030
- 65 per cent of the population born 1949-68 participates in funded scheme
- indexation of benefits at CPI plus 20% of average real wage growth
- notional accounts indexation at 75% of wage bill growth
- Increase in wage bill / GDP ratio to 40 per cent
- Covered wage bill: 80 per cent of total wage bill (current estimates)
- increase in participation rates in labor force by 20 per cent

According to baseline scenario, the initial period of deficit, caused by shifting part of the contribution to funded pillar and later, by the worsening demographic situation will last until 2001. After that, the old-age fund will have an annual surplus of approximately 0.7 per cent of GDP. The surplus will be smaller in the 2020s, due to retirement of the post-war baby boom generation and additional reduction of contribution revenues, because of the retirement of cohorts that do not participate fully in the funded pillar vs. cohorts entering labour market who split contribution between first and second pillars. Approximately by 2035 all contributors will be participating in the funded pillar and changes in revenues level after this date can be attributed only to changes in labour force and average wage. During this period, the revenues of the pay-as-you-go old-age fund will drop from current 6 per cent to 2 per cent of GDP, and expenditures will drop from 6.5 per cent to 1.5 per cent of GDP.

The alternative scenarios assume changes in the assumptions to investigate impact of economic and demographic development on the pension system.

### a. Constant contribution scenario

Compared to baseline assumption, the contribution rate was kept on the current level: 19.52 per cent until 2008 and 18.52 per cent thereafter (current legislated level).

The most significant difference concerns the revenue side, as there is no additional reduction of revenues caused by reduction of contribution. At the end of projection period, revenues will be on the level of 4 per cent of GDP. Changes in contribution rates have also

impact on expenditures side. Higher contributions will be registered on the notional accounts and create higher implicit debt to working population. This will cause increase in expenditures by additional 0.5 per cent of GDP compared to the baseline scenario. The overall result of this projection is a significant surplus in the pay-as-you-go old-age fund, exceeding the level of 1 per cent of GDP annually.

#### **b. Increased retirement age scenario**

In the case of increased retirement age to 65 for women and 66 for men, revenues of the PAYG old-age fund will increase compared to baseline and expenditures will drop down. The most significant impact of this change could be observed between 2010 and 2030, when the system still pays obligations to cohorts in old system and transition period, when the replacement rates are still on a high level. Increase in retirement ages does not have that significant influence by 2050, both as a result of actuarial adjustments in pension payments and reduction of system liabilities in the new first pillar.

#### **c. current survival rates**

Assuming no changes in the longevity rates for Polish population, one can observe additional improvement of PAYG old-age fund surplus. This change increases the surplus by approximately 0.2 per cent of GDP, which is not very significant. However, further increase in longevity can have substantial influence on the expenditures of the system.

#### **d. higher switching**

Scenario assumes that 90 per cent of the population born between 1949 and 1968 decided to switch to the funded pillar. This has a negative impact on PAYG system during the first years of the new system functioning, as old PAYG system still pays its obligations, while revenues are significantly reduced. In the long run, however the expenditures of the old-age system are lower in years 2015-2040, as part of the old-age liabilities for those cohorts was shifted to the private sector. The total present value of higher switching should be positive, but from the point of view of the short term financial liquidity of the system it is less desirable, as discussed in previous sections.

#### **e. higher indexation of benefits**

If the benefit indexation was increased to 50 per cent of average wage growth, expenditures of the PAYG system would increase, especially during first decades after reform introduction, as liabilities of the public scheme are still very high. In the long run this effect has a smaller impact on expenditures, increasing them by approx. 0.3 to 0.5 per cent of GDP annually. Changes in indexation principles do not have any impact on.

#### **f. lower economic growth**

In this scenario we assumed a growth rate at 1.5% annually. Lower economic growth affects mostly the expenditures of the pension system, as the model assumes a link between GDP growth and wage growth. Expenditures are increased, as the result of lower indexation both of benefits and notional accounts are not that significant, as it is in the case of higher growth rates. In this scenario, the public PAYG system is in deficit in the period of 2020-2034,

where there is the worst combination of economic and demographic conditions for the pension system.

#### **g. higher indexation of notional accounts**

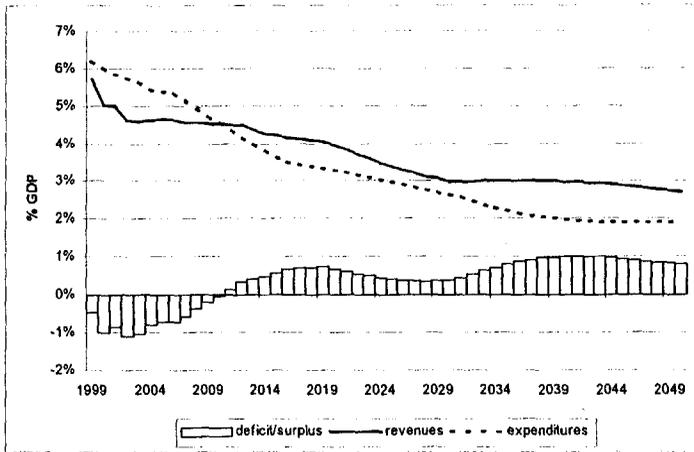
The last scenario assumes full indexation of notional accounts, to the wage bill growth. As a result, expenditures increase after 2014, when people covered by the new system are retiring. This change leads to lower surplus, compared to baseline scenario, but still, the system is not creating any deficit after 2014.

Generally, the long term prospects of the public PAYG scheme after the introduced pension reform are quite good. However, the system is not immune to developments of economy, such as lower growth, as well as political factors, such as changes in benefit or notional accounts indexation. If the assumed characteristics will be followed by real developments, the goal of reducing the contribution to the target level of 14.6 per cent for old-age pensions can be achieved, without creating deficits.

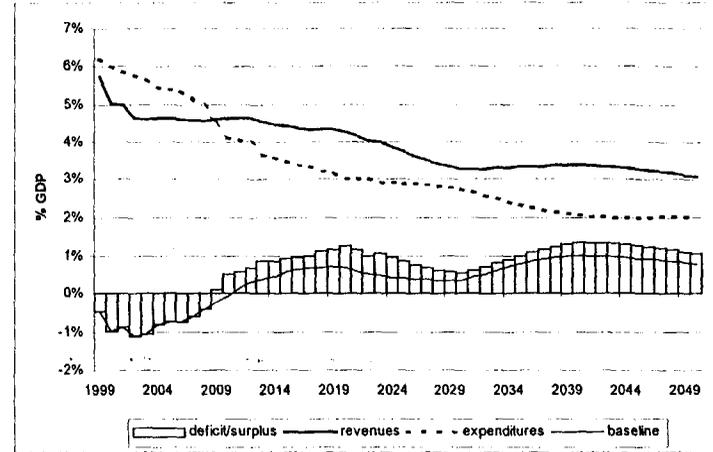
The pension reform by itself does not guarantee long-term stability of the pension system. It lays the ground for better management of the public pension scheme, however it needs to be followed by continuous monitoring of economic and demographic development in the country. That is why the government of Poland plans to create an office, responsible for long-term projections of a social security system (including old-age, disability and health care systems). Existence of such an office and public discussion of the actuarial stability of the social security would check possible *ad hoc* manipulation of the pension system design in the future. It may be especially tempting for example to raise benefits when reserves are supposed to be accumulated, when the reserve assets needed to sustain the stability of the pay-as-you-go scheme will amount to a significant share of GDP.

**Figure 16. PAYG old-age fund expenditures and revenues, 1999-2050 (% GDP)**

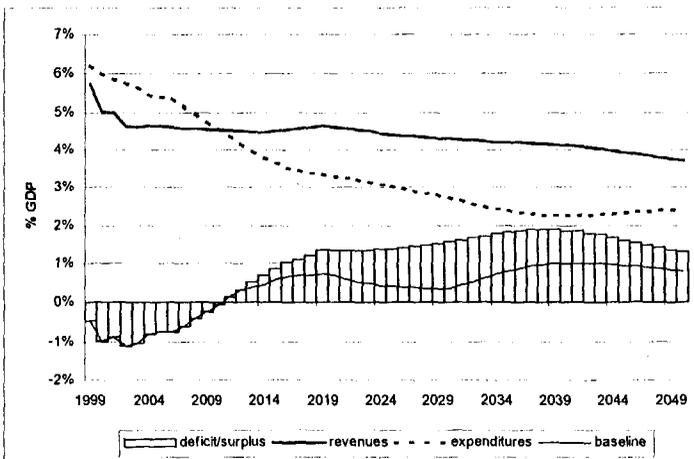
**16a. Baseline**



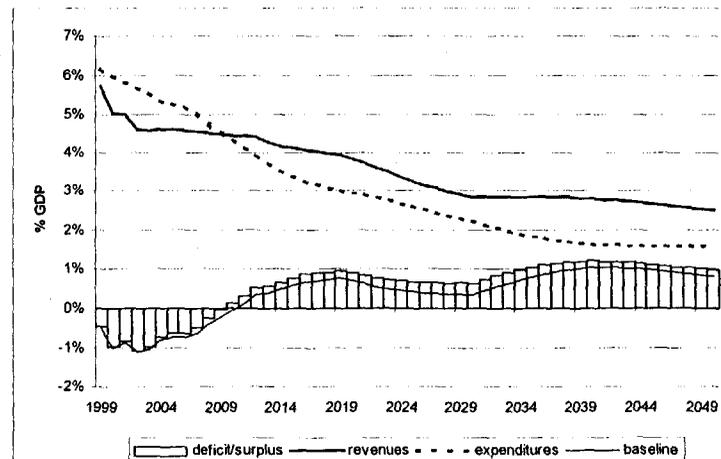
**16c. Increased retirement age**



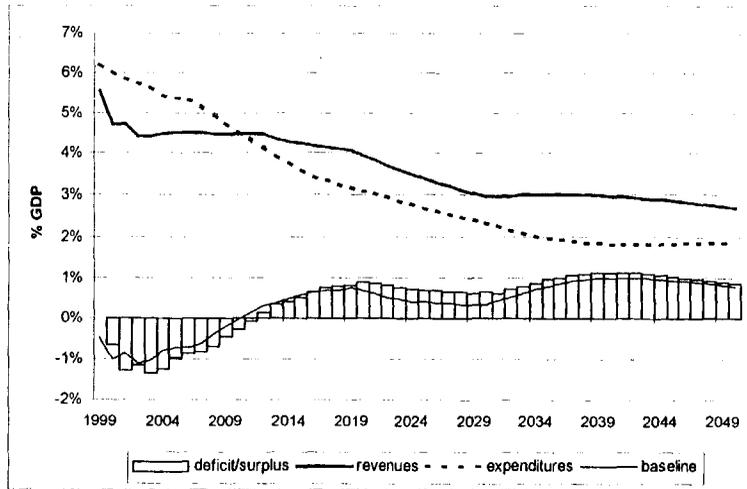
**16b. Constant contribution**



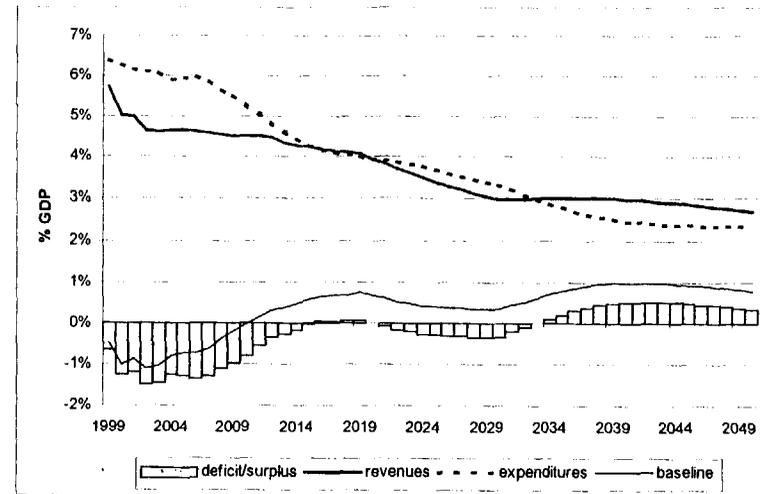
**16d. Current survival rates**



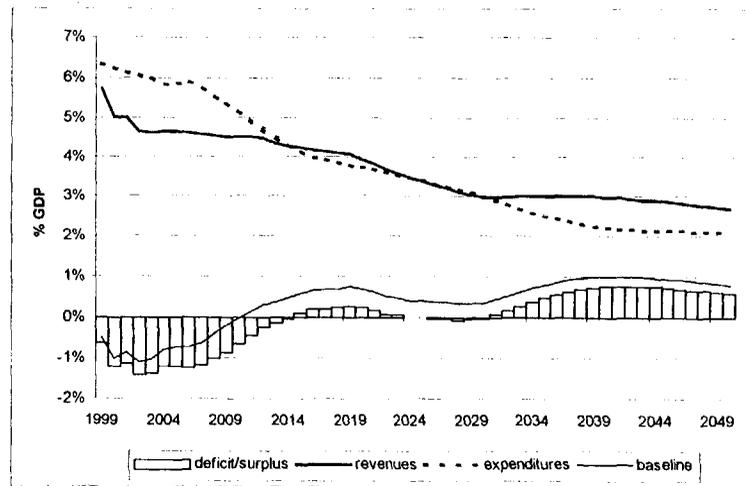
**16e. Higher switching**



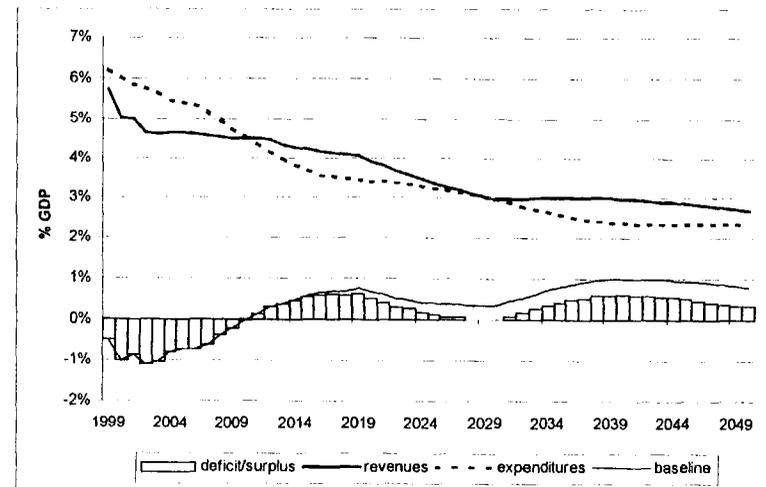
**16g. Lower economic growth**



**16f. Higher indexation of benefits**



**16h. Higher notional accounts indexation**



## 6. Preliminary conclusions and lessons for other countries

Pension reform in Poland touched almost all aspects of retirement provision, starting from institutional changes in the social security administration, through diversification in financing of the future benefits to shifting the system from a defined benefit to defined contribution regime.

The most important elements introduced by reform are:

- reduction of demographic risk of the finances of the system by introducing defined contribution regime in mandatory system;
- introduction of notional defined contribution first pillar
- introduction of funded second pillar, managed by private pension fund managers
- allowing market mechanisms to increase efficiency of management
- introducing strong link between contributions and benefits and as a result, stronger incentives to postpone retirement decision;
- creating more room for individual choice, both in the accumulation and disbursement phase
- separating retirement savings from other parts of the social security system
- setting a foundation for the further changes in the social protection area

As shown in the paper, the old-age system reform sets foundations for long-run stability of the old-age pension system. It also makes it more immune to ad hoc political changes and debates, by reducing the necessary participation of the state budget. The final outcome includes some transitional regulations that reduce the fiscal savings as presented in initial proposal. Those changes, however, do not compromise the long-run financial balance of the pay-as-you-go pillar.

The reform process is not finished, and there are still some components to be put in place. Those include legislating the bridging pensions arrangements for people working in special conditions, and the annuities law that establishes framework for benefit payments in the second pillar. The new social security system should also be a subject to long-term forecasting, in order to prevent any changes that could threaten the stability of the social security system. Thus, proper actuarial supervision should be established and institutionalized.

Also, other elements of social protection need to be adjusted to the new old-age system. Those include especially disability scheme, as in its current shape there is a threat of leakage from old-age to disability, as disability scheme offers more generous benefits.

The reformed system started operating on 1 January 1999 and the first pensions will be paid about ten years from the implementation. It is too early to draw conclusions about the system performance. However, it is well worth underlining the factors that enabled such a

fundamental reform to be put together and legislated after a long period of fruitless discussions.

First, **the contents of the reform package**. There was broad popular support for a pension reform that included a closer link between contributions and benefits and a greater role for the private sector at the expense of the social insurance institution (ZUS).

Secondly, **the leadership**. The governments of prime ministers Cimoszewicz and Buzek recognised the need for a plenipotentiary for pension reform with an office independent from political influences and free of the task of day-to-day management of the pension system. The plenipotentiaries — Baczkowski, Hausner and Lewicka — have successfully shielded the office for pension reform from political fights, enabling it to focus on its professional tasks.

Thirdly, **co-operation with trade unions**. *Security through Diversity* was consistently supported by the Solidarity trade union and OPZZ (at least until the end of 1997) and both were intimately involved through several consultations. Solidarity had published its own reform proposal in 1995, which included the creation of mandatory funded pillar.

Fourthly, **moving quickly to grasp opportunities**. All three of the plenipotentiaries understood the need to move quickly and decisively to take advantage of the public consensus behind pension reform, as the old system became discredited and the implications of demography became widely known. Mistakes can always be corrected later. It is vital to remain ahead of opponents to avoid the reform being postponed indefinitely.

The main conclusion from Polish pension reform is that when an opportunity presents itself it should be seized. Politicians should foster appropriate conditions both for experts to design and implement the proposal and for a broad consultative process to foster support.

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## Appendix

**Table 7. Old and new pension system characteristics**

	Old system	New system
<b>Formula</b>	$P = 0.24W + W \cdot I \cdot 0.013 \cdot L + W \cdot I \cdot 0.007 \cdot S$ W - national average wage for previous quarter I - individual wage index L - total length of service S - additional years accepted for insurance benefits	$P = K/G$ K - pension capital of insured, composed of imputed, registered and old-age contributions G - life expectancy coefficient at pension allotment
<b>Eligibility criteria</b>	<b>Length of service</b>	20 for women, 25 for men
	<b>Minimum length of service</b>	15 for women, 20 for men, without a right to a minimum pension guarantee
	<b>Qualifying service</b>	Employment, self-employment, military service (non professional), time repressed, unemployment period, Additional periods: education, maternity, taking care of disabled child
	<b>Additional credits</b>	Special multipliers for miners and railway workers
	<b>Normal pension age</b>	60 for women, 65 for men with lot of exclusions. Average retirement age in 1998 - 55 for women and 59 for men
	<b>Early retirement</b>	Granted for disabled, miners, teachers, railway workers, people working in special conditions (list including 250 different categories) - approx. one quarter of population covered. Also early retirement at 55 for women with at least 30 years of contributing
	<b>Credit for deferred pension</b>	No special credit, only increase of 0.0013 of individual wage per each year worked
<b>Indexation of benefits</b>	Since 1996 - at least prices. The real growth defined annually in the state budget law	From 1999: mixed price-wage formula, with 20% share of wages
<b>Taxation of benefits</b>	Taxed	Taxed
<b>Working pensioners</b>	Allowed with wage limitations, pension recalculated by adding extra contributory years to the formula	After reaching retirement age - allowed without limitations. Pension recalculated by adding additional contributions divided by life expectancy at the recalculation moment. No funded pillar participation after retirement
<b>Transfer between disability and old-age benefits</b>	A choice between benefits	A choice between benefits

	Old system	New system	
<b>Survivor pension</b>	Depends on the number of people eligible - from 80% to 90% of the benefit that a late person would have received or was receiving (either disability or old-age pension)	Depends on the number of people eligible - from 80% to 90% of the benefit that a late person would have received or was receiving (either disability or old-age pension). Pension split equally between people eligible to receive benefit	
<b>Replacement rates at 65 for average worker</b>	76%	Approx. 59%	
<b>Minimum guarantee</b>	Minimum: In nominal terms, indexed as other pensions for every pensioner that worked for a qualifying period, paid from the Social Insurance Fund. In 1998 - approx. 70% of minimum wage	Minimum: In nominal terms, indexed as other pensions for every pensioner that worked for a qualifying period, topping up pension from first and second pillar and financed from the State Budget.	
<b>Maximum benefit</b>	Maximum: replacement rate not higher than 100%, individual's wage factor not higher than 250% of average wage	No maximum benefit	
<b>Contributions</b>	<b>Financing</b>	Paid by employer, not divided into different risk categories	Paid partially by employer and employee, divided into: old-age, disability, sickness and work injury contribution, contributions tax exempt
	<b>First pillar</b>	Mandatory PAYG system - 45% of wage	12.22% contribution to PAYG old-age fund, 17.07% - other benefits (disability, survivor and short-term benefits) Note: Wage increased in 1999 by 23% to compensate for the split of contribution
	<b>Second pillar</b>	n.a.	7.3% of wage
	<b>Ceiling and floor levels</b>	Minimum base: minimum wage for workers, 60% of average wage for self-employed; no maximum	Minimum base: minimum wage for workers, 60% of average wage for self-employed; Maximum: 250% of average wage
<b>Administration</b>	<b>Contribution collection</b>	Social Security Institute (ZUS)	ZUS collects contributions all social security purposes, including 2 <sup>nd</sup> pillar
	<b>PAYG pillar</b>	Social Security Institute	Social Security Institute
	<b>Second pillar (accumulation)</b>	n.a.	Open pension funds and pension fund managers, supervised by State Supervision Agency
	<b>Second pillar (benefits)</b>	n.a.	Mandatory annuity in one of the private annuity companies
<b>Special systems</b>	Armed forces (army, police, border guards, firemen), farmers, judges and prosecutors	Farmers, judges, prosecutors, armed forces in force prior to January 1, 1999	
<b>Third pillar</b>	Mostly life-insurance combined with investment fund	Employee pension programs in four basic forms (live insurance, investment fund, mutual insurance, employee pension fund). Contribution up to 7% not covered by social security tax, but covered by income tax. Benefits not taxed. Benefits available from the age of 60.	

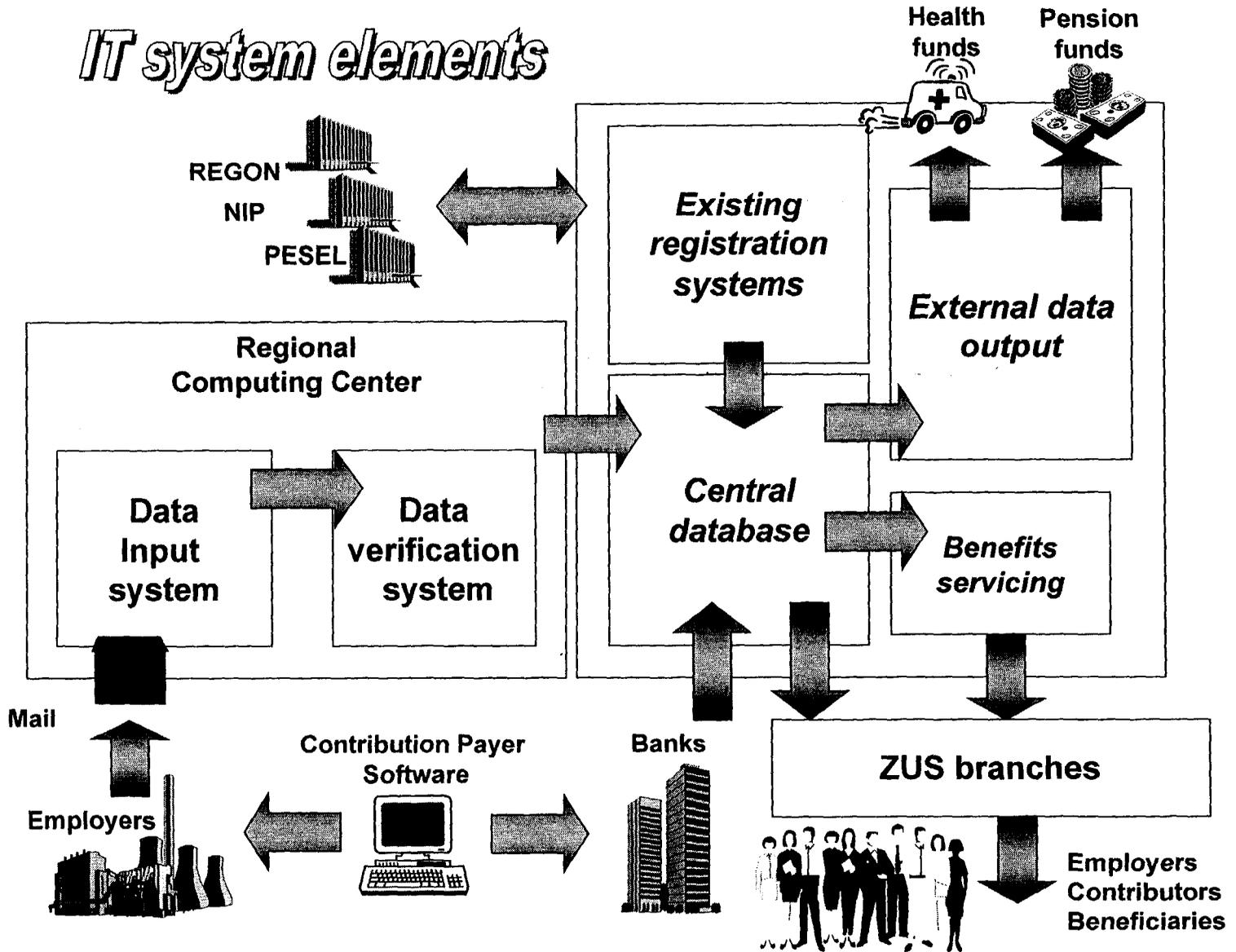
**Table 8. Initial reform proposal as in *Security through Diversity* and its changes during the reform process**

	<b>Initial proposal</b>	<b>Final solution</b>	<b>Consequences</b>
<b>Retirement age</b>	62 – 62. Equal for men and women	60 for women and 65 for men	Differences in benefits between men and women, higher expenditures and lower revenues of a pension system
<b>Age groups covered</b>	Everybody up to 50	Excluding those who accrue pension rights before the end of 2006	Medium-term increase in expenditures
<b>Occupation groups covered</b>	Workers, self-employed, judges and prosecutors, military forces up to 30 (army, police, border guards, prison guards, firemen).	Judges, prosecutors and those who were in force before January 1, 1999 are excluded. Reform covers those who join military forces after 01/01/99	Increase in expenditures of a state budget (financing pensions for those remaining outside the system)
<b>Early retirement</b>	No early retirement	Early retirement for those who worked 20 or 25 years (depends on gender) prior to 1999, with adjustment in benefit formula (adding additional rights)	Medium-term increase of expenditures and reduction of revenues
<b>Disability pensions</b>	All disabled converted into old-age pensioners at age of 60	At the retirement age – free choice of benefit	Probably higher expenditures of disability fund and lower of pension fund. Not solved issue of 2 <sup>nd</sup> pillar accumulation
<b>Working on disability pensions</b>	Forbidden for fully disabled people outside labour protected companies	Allowed	Increased incentives to draw a disability pension and work on the same time, what leads to higher expenditures of pension system
<b>Notional accounts indexation</b>	Covered wage bill growth	75% of covered wage bill growth	Initial proposal imposes no changes in contribution rate, final solution allows for reduction of contribution rate
<b>Benefits indexation</b>	To prices	Mixed price-wage with 20% weight of wages	Increased expenditures of pension and disability funds
<b>Initial capital</b>	Accrued pension as of 65 years of age	Accrued pension as of 62 years of age	Higher implicit debt of the pension system
<b>Pension formula</b>	K/G for all groups	K/G for all groups, except mixed old-new system formula for retirees in 2009-2013	Higher expenditures of pension system, smoother transition between old and new system retirees

**Table 9. Medium-term projections assumptions**

<i>Year</i>	<i>GDP growth</i>	<i>Real wage growth</i>	<i>Employment growth</i>	<i>Real interest rate</i>
1999	4.80%	5.12%	1.35%	4.50%
2000	5.10%	5.38%	1.15%	3.80%
2001	5.40%	6.19%	0.38%	3.70%
2002	5.70%	6.36%	0.28%	3.50%
2003	5.80%	6.46%	0.38%	3.40%
2004	5.60%	5.90%	0.67%	3.40%
2005	5.40%	6.07%	0.19%	3.40%
2006	5.20%	5.61%	0.38%	3.30%
2007	4.90%	5.52%	0.19%	3.30%
2008	4.60%	5.24%	0.19%	3.20%
2009	4.40%	5.15%	0.10%	3.20%
2010	4.20%	4.87%	0.19%	3.20%
2011	4.10%	4.87%	0.10%	3.20%
2012	4.00%	4.78%	0.10%	3.20%
2013	4.00%	4.78%	0.10%	3.20%
2014	3.90%	4.78%	0.00%	3.20%
2015	3.90%	4.78%	0.00%	3.20%
2016	3.90%	4.78%	0.00%	3.20%
2017	3.80%	4.78%	-0.10%	3.20%
2018	3.80%	4.78%	-0.10%	3.20%
2019	3.80%	4.78%	-0.10%	3.20%
2020	3.80%	4.78%	-0.10%	3.20%

Figure 17. IT system design



**Figure 18. Registration of employees in ZUS**

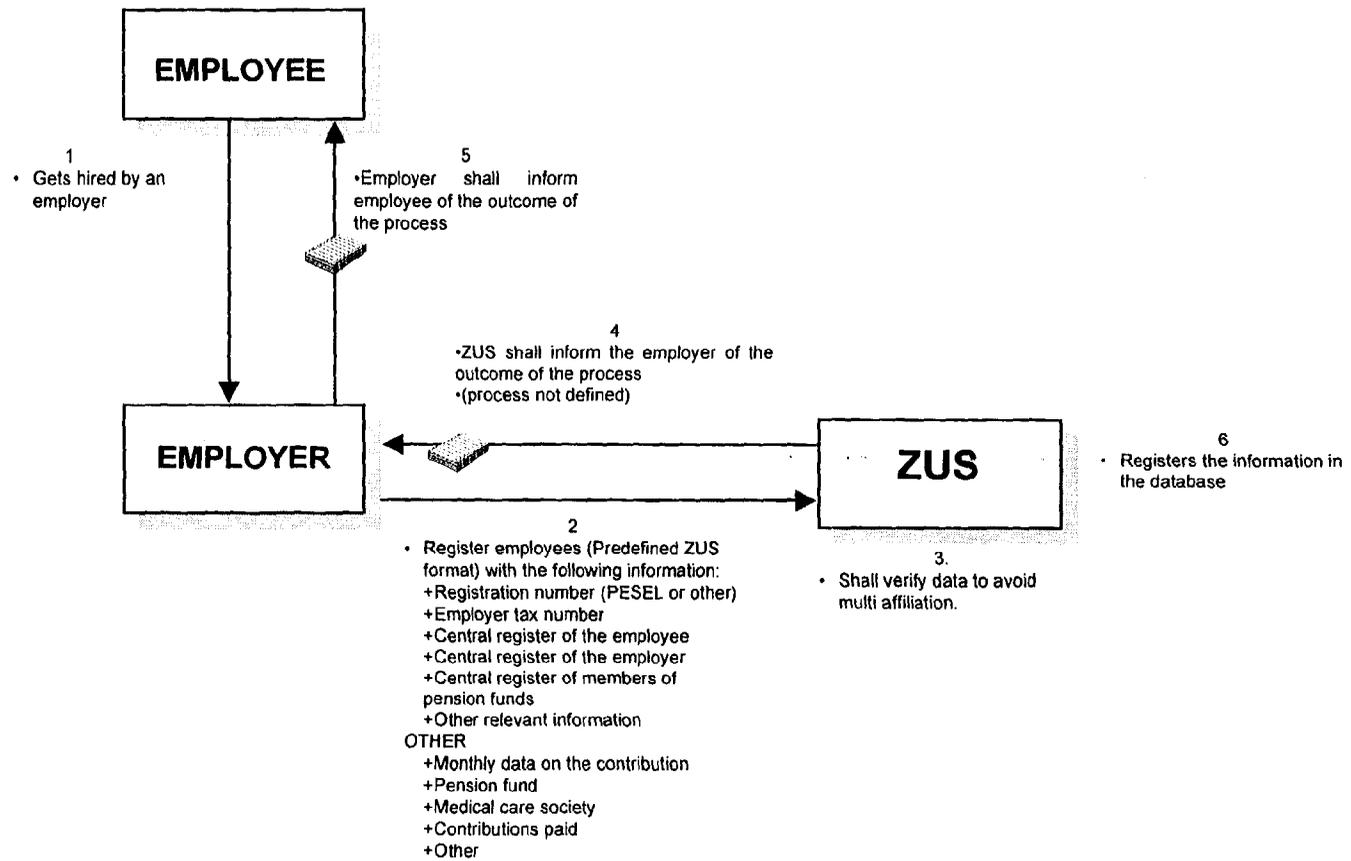
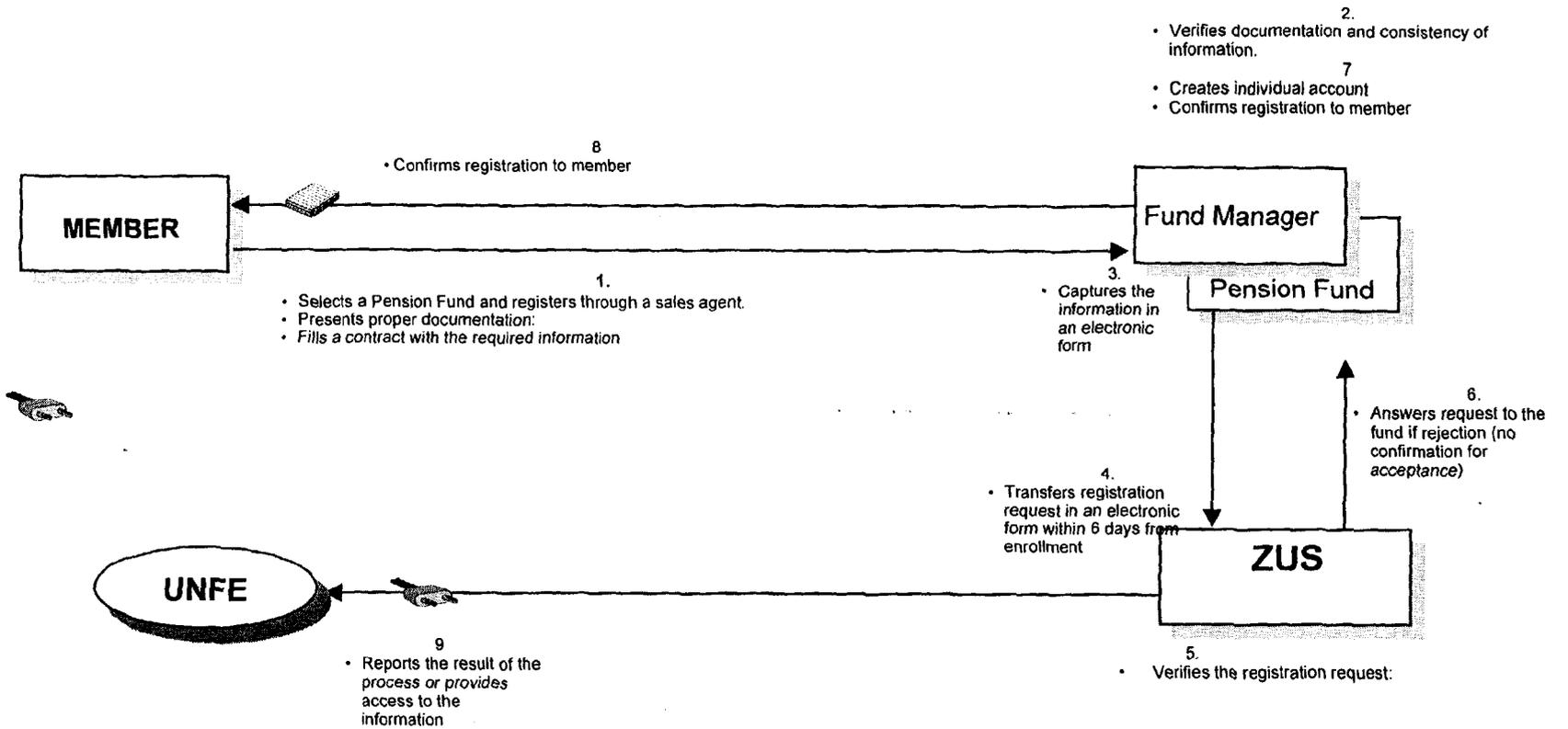
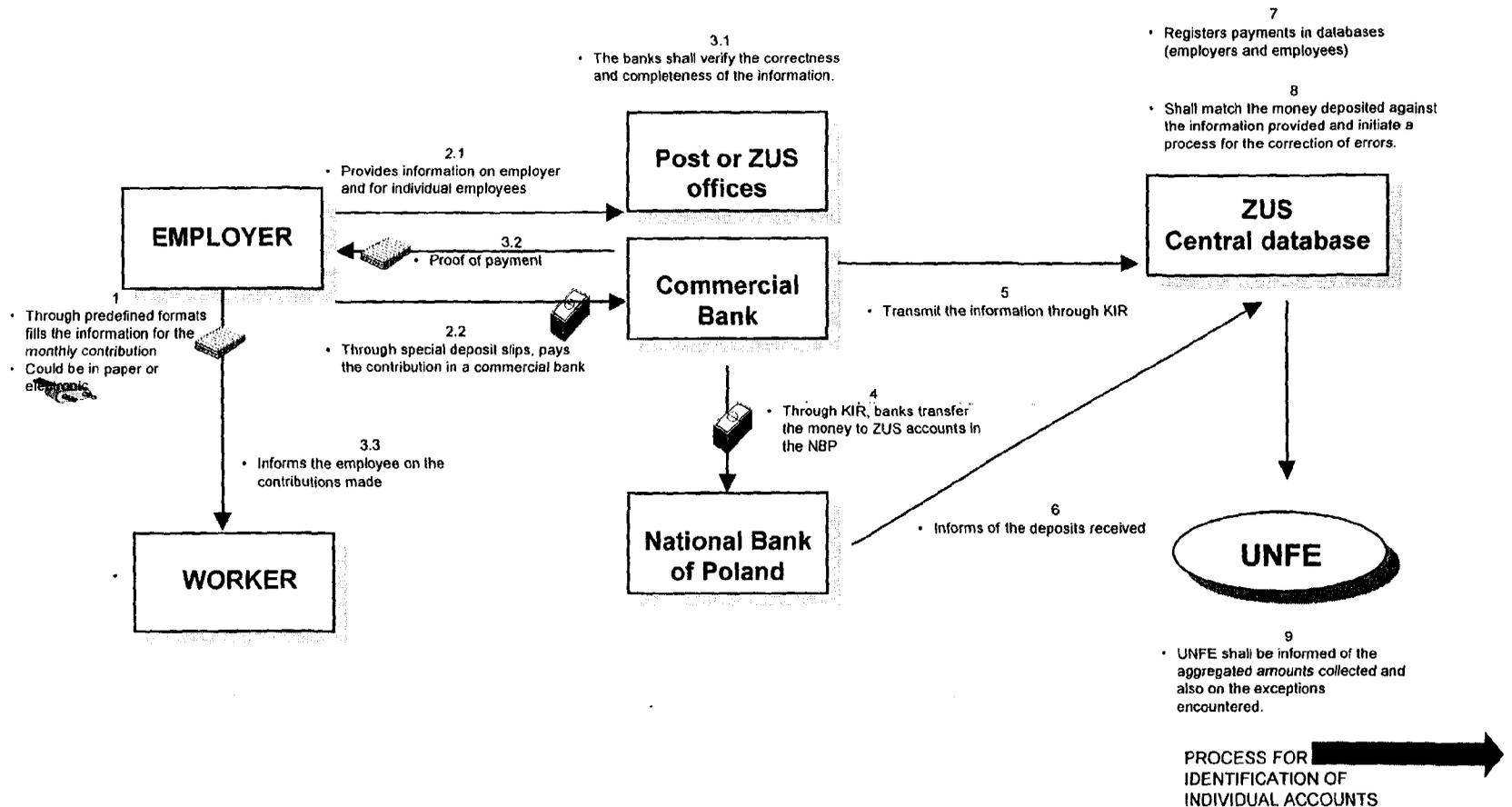


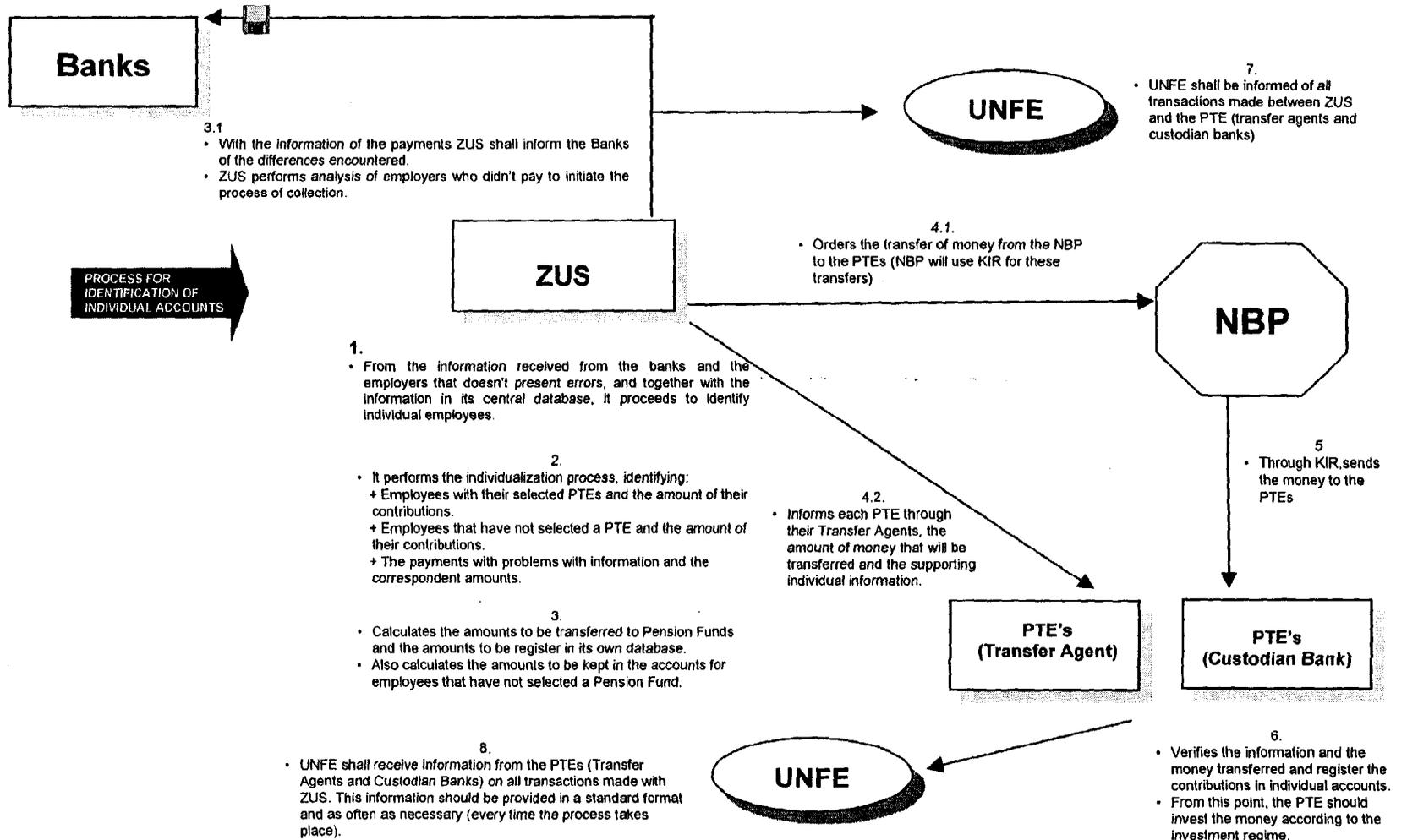
Figure 19. Registration of pension fund members



**Figure 20. Contribution collection mechanism**



**Figure 21. Individual accounts identification**



### *Other benefits financed from the social security fund*

The social security fund (FUS) will establish separate funds for other benefits paid from social security. It includes:

- Disability fund
- Fund for sickness (including maternity leave and rehabilitation),
- Fund for work-related illness (including accidents)

There are also two reserve funds – one for sickness and disability and the other for work injury fund. Having separate reserve funds is related to planned changes to work injury insurance. According to those, employers will pay contribution related to the probability of occupational disease or work injury in the sector. Work injury fund will be a subject to actuarial adjustment each year.

The rules for disability benefits were also rationalised. Disability benefits are granted for permanent or temporal incapacity to work (not with relation to health detriment as it was before). If there is any possibility that the individual's health might improve, then a temporary benefit will be paid. There are two levels of disability: full and partial incapacity to work, based on the judgement of a social security doctor, employed by ZUS. Partial disability benefit amounts to 75% of a full benefit. A pre-pension rehabilitation system was also established. Disabled people are allowed to work, regardless the level of disability, not only in labour protected workplaces, but also on a regular labour market. Attempts to change this rule caused protests from disabled, who argued that working is a way to rehabilitation and additionally, they need salary income to pay for the living expenses. But this solution is still discussed in the government.

At the moment, disability expenditures in Poland exceed 3 per cent of GDP, while disability pensioners amount to 38 per cent of beneficiaries of social security system<sup>55</sup>. The social security system allows for a choice of the benefit for those who are eligible to more than one benefits (e.g. old-age and disability pension). If this situation was continued, in the future there could be a significant leakage from old-age to disability. Thus, the next step in reforming the welfare system in Poland is to resolve the issue of the disability system<sup>56</sup>.

Also the area of short-term benefits requires significant changes. Sickness benefit system was a source of increasing deficit. In 1998, the number of sickness days was by 9.7 per cent higher than in 1997 and 13 per cent higher than in 1996, of which, number of days financed by social security system<sup>57</sup> were 14.5 per cent and 20 per cent respectively. Absenteeism figures also vary within the groups of insured people. Number of sickness days in 1998 increased by

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<sup>55</sup> This figure does not take into account that Polish system allows to draw disability pension also after retirement age, which means that the real number of disability pensioners in Poland should be smaller.

<sup>56</sup> Initial steps towards reforming this element were taken by Polish government in 1999. The reform proposal is planned to be formulated in early 2000.

<sup>57</sup> According to the law, employers in Poland finance first 35 days of employee's sickness benefit.

8.7 per cent among employed and by 15.5 per cent among self-employed. In mid 1999 Polish parliament legislated new sickness benefit law, which introduces several measures to lower sickness spending. Treating doctors, who provide sickness certificates will need a registration, which can be withdrawn in case of irregularities. At ZUS the number of social insurance doctors will be increase, to ensure better supervision and screening of sicklisted clients. During the initial period of sickness absence (obligatory wage payment period), employers may request medical re-examinations by ZUS in case of doubt about the legitimacy of work incapacity. Some additional measures are still discussed. For example, introducing a three day period, when worker does not need any certificate to proof sickness period (without a right to salary).

Polish government plan for 1999 also includes preparing a new proposal for work injury system, leading to diversification of work injury contribution, based on the risk of work injury or occupational sickness in industries.

### **Short and medium-term financial projections**

The highest share in expenditures is attributed to the disability fund (3 per cent of GDP in 1998). In the future, expenditures of disability fund should decrease, mostly as a result of benefit indexation principles. After 2010 disability expenditures may grow, as a result of ageing population an inflow to disability of post-war baby boom generation.

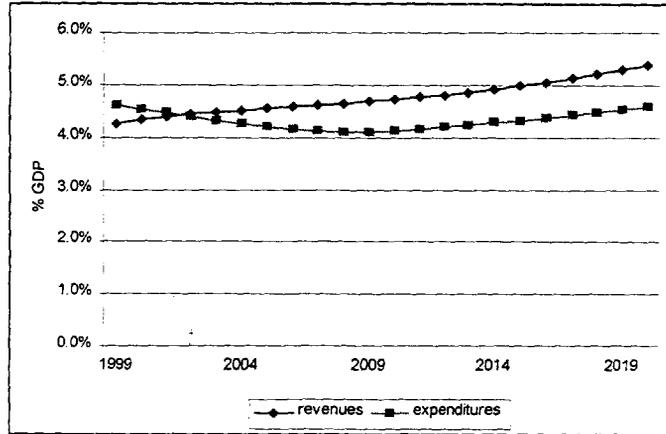
With regards to short-term benefits, without changes, both sickness and work-injury fund are expected to have a deficit, each approximately at the level of 0.3 per cent of GDP annually (Figure 22). Because those benefits are based on the current wages, the only way to improve their balance is to either increase the contribution rates or to cut expenditures. The first option may be exercised under the new work-injury law, when contribution rates will be calculated according to actuarial principles. The new sickness benefit law is expected to create savings at a level of 0.3 per cent of GDP, which will reduce deficit in this part of the social security system..

### ***Uniformed services pensions***

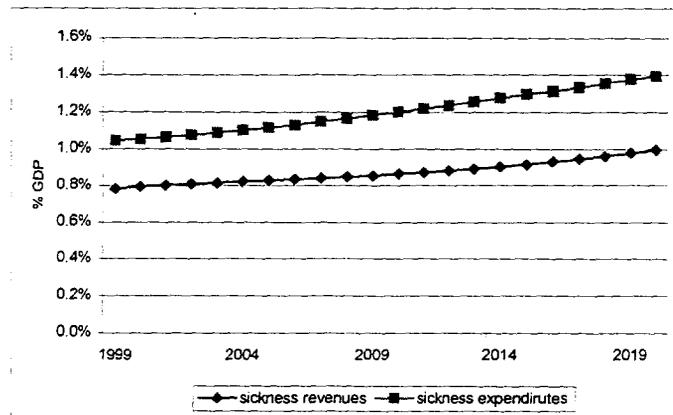
The uniformed services, mainly the army and police, have a special pension system with completely different rules. The scheme is non-contributory and benefits are paid directly from the general state budget. The reform covers those, who start their service after January 1, 1999 by including them in the general system, all those who were in service before keep their existing pension entitlements. Although the uniformed services do have different pensions needs, an entirely separate system reduces mobility between the uniformed sector and other jobs. Including the uniformed services in the universal system does not impose substantial additional costs.

**Figure 22. Social insurance system expenditures and revenues, 1999-2020 (% GDP)**

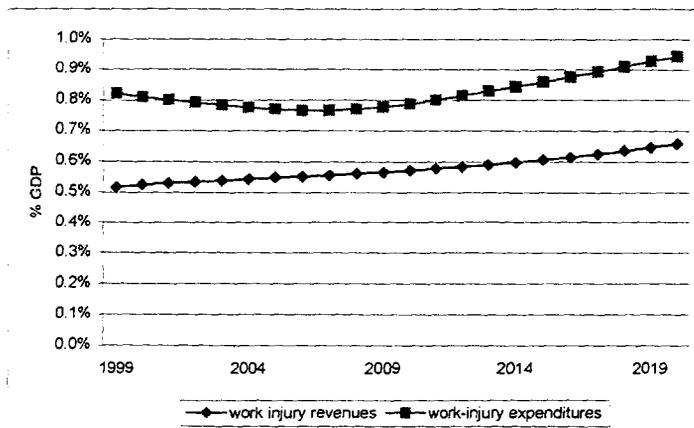
**22a. Disability fund**



**22b. Sickness and maternity fund**



**22c. Work injury fund**



Source: Social Budget Model

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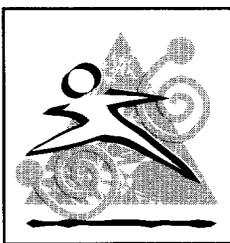
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## Summary Findings

All over the world, pension systems have financing difficulties that need to be addressed. There are three ways of dealing with pension systems problems – finance it to a greater extent from general revenues, rationalise the system, which produces savings in the short run, or a full-fledged reform, changing the logic and foundations of the system.

After several years of political and professional discussions, Poland decided to follow the latter path and introduced a new defined contribution multipillar system, consisting of a public Notional Defined Contribution, pay-as-you-go first pillar, a funded private second pillar, and voluntary funded third pillar. The new framework covers only retirement savings, while other benefits still remain under the old defined-benefit pay-as-you-go regime. The reform was launched on January 1, 1999. As of this date, the old defined benefit pay-as-you-go system was terminated for workers younger than 50. The new old-age system attempts to offer actuarially fair benefits, potentially creating incentives to increase compliance and postpone retirement. Minimum benefit provision for those who fall below the guaranteed level is co-financed from general revenue. Diversification of retirement savings provides greater security to the members, as labour market developments that determine the notional rate of return in the first pillar, and financial market developments that determine the second pillar rate of return are not perfectly correlated. This is why the reform package has been named Security through Diversity.

This paper presents the current situation of the pension system, the struggle for pension reform in the 1990s, structure, the long-term outlook of the new pension system and the main aspects of the system design as well as first experiences from the implementation process. Long-term projections show that the new system allows for greater financial stability of the public pension scheme and increases the savings rate with a positive impact on economic growth.

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