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SOCIAL SECURITY REFORM

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Editors

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Chapter 3:

The Outline of the Polish Case

The Polish pension reform program

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The presentation is based on the Polish pension reform program entitled "Security Through Diversity" and prepared by the team of the Office of the Government Plenipotentiary for Social Security Reform.

1. The need for reform

The Polish social insurance system is criticized as costly, obscure, and unjust. Most importantly, the system is threatened with breakdown during the next 10-15 years. The high pension costs do not provide satisfactory benefits. Future benefits are not related to contributions. Many people hold the opinion that their pension is based on imprecise criteria and arbitrary decisions often made *ad hoc* by government authorities under the pressure of short-term economic needs. Therefore, the proposal to reshape the Polish pension system based on fixed principles, long-term valuations and safety guarantees is very important.

A strong dependence between benefits and contributions paid throughout the working career is necessary. However, this dependence is insufficient to provide for social security. The capacity to provide an expected benefit at the right time is essential for *real* security. In the past, such capacity was identified with governmental guarantees. That assumption constituted a fundamental error. The state cannot guarantee something depending on economic growth, i.e., on the sum of decisions of millions of enterprises and consumers in a market economy. The state may only guarantee fund redistribution between entities or that the government itself will choose between different strategic objectives, one of these being pension payments.

The modern understanding of social security does not accentuate governmental guarantees but rather *the diversification of sources of financing benefits*. The illusionary nature of guarantees has also become all too evident in Poland. The public pension depends on the growth in pay, whereas the private pension depends on investment growth in the financial markets. The best guarantee for real security is a pension benefit derived from both the public and the private sector. As the reform plan assumes that all future pensions must originate from both public sources (the reformed Social Insurance Fund) and universal private pension funds, it is called Security Through Diversity.

The social insurance crisis in Poland became fully visible in the 1990's. Difficulties appeared in assuring the financial sustainability of the Social Insurance Fund (FUS). As a result, the social insurance contribution rate grew quickly from 25% in 1981 to 38% during 1987-1989 up to the present level of 45%. The crisis was caused by the simultaneous occurrence of:

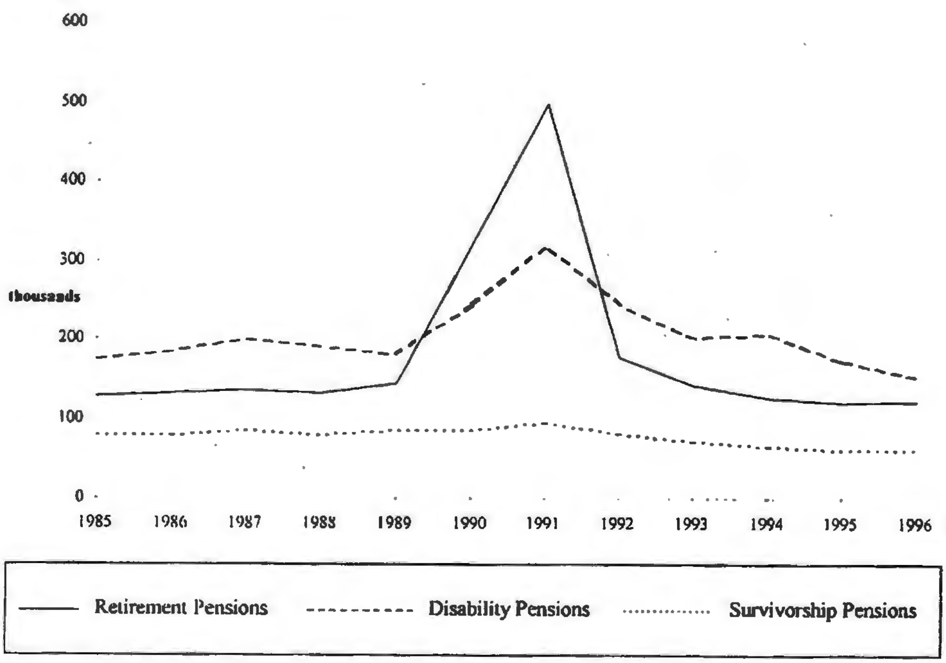
- a sudden increase in the number of new pensioners, especially in 1991, with effects in later years (Graph A);
- a decrease in the number of contributors as a result of a decline in employment (Graph B);
- a distinct growth in the real value of pensions compared to real compensation (Graph C).

As a result, the consolidated state budget became more burdened with disability pensions and other benefit costs (Table 1). In Poland, retirement and disability benefits exceed 15% of GDP. In countries with a similar income per capita, these expenses usually do not exceed 8%. In Western Europe this expense averages 11%.[1]

At the same time, demographic forecasts show a further deterioration in the ratio of persons collecting benefits to those paying contributions. This dependency ratio

[1] Most people understand that high benefits mean high taxes and, what follows, a large share of the state budget in GDP. In turn, that hinders economic growth and therefore the level of future benefits. In respect to the share of expenses for benefits (and for social monetary transfers in general) in GDP, the rule is: the poorer the country, the *smaller* this share. Otherwise, economic growth is slower because the share of these expenses slows down economic growth in a poorer country more than in a richer country and strengthens the difference between the level of compensation and benefits.

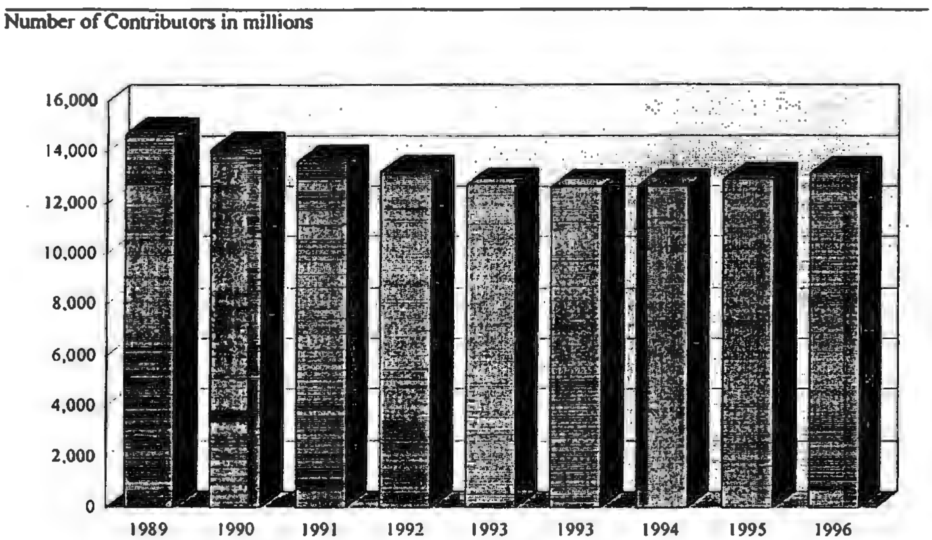
will get particularly worse after the year 2006. Demographic forecasts indicate that the baby boom generation will reach retirement age at that time (Graph D). The predicted public expenses for pensions and disability pensions clearly show that if not rationalized, these expenses will increase to 22% of GDP by the year 2035[2].



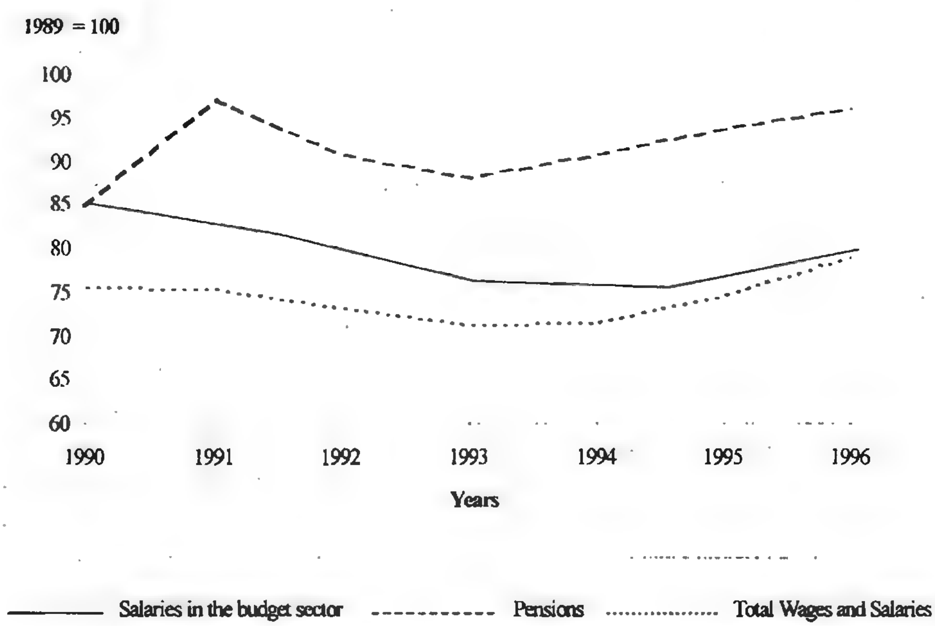
Graph A. Numbers of new beneficiaries who entered the system in the period 1985-1994.

At first, these trends may appear to be counteracted by simply rationalizing the present system. The system might be rationalized through consistent maintenance of price (or approximate price) indexation of benefits, increasing the real pension age from the very low present age of 59 for men and 55 for women, and extending the calculation base period. Taken together all these moves would stop the increase in pension costs, especially under a scenario of high economic growth. However, the system would be on the edge of financial sustainability and a significant macroeconomic change could cause serious disruption or even a breakdown of the system.

[2] Calculations based on IMF assessments.



Graph B: Numbers of participants in the period 1989-1996



Graph C: Dynamics of pension benefits and compensation in real terms

Table 1. Revenues and expenditures of the Social Insurance Fund (FUS) and the Labor Fund in Poland (%GDP)

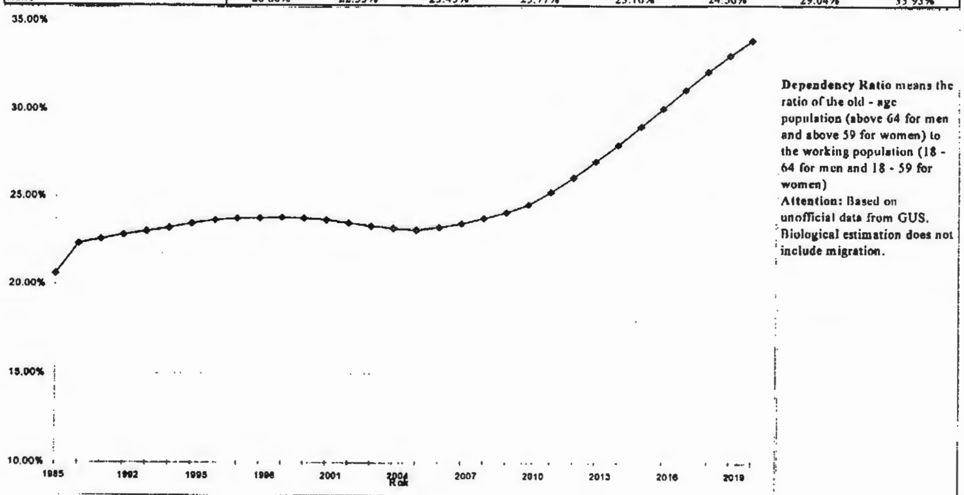
	1991	1992	1993	1994	1995	1996
Social Insurance Fund (FUS)						
Revenues (including state subsidies)	**13.8**	**16.2**	**16.0**	**16.2**	**14.7**	**14.8**
State subsidies only	**2.7**	**4.3**	**4.2**	**3.9**	**2.1**	**1.9**
Expenditures including benefits	**14.2**	**15.8**	**15.8**	**16.1**	**14.4**	**14.9**
Retirement and disability benefits only	**10.9**	**12.8**	**12.7**	**13.2**	**12.4**	**13.0**
Labor Fund						
Revenues (including state subsidies)	**1.9**	**2.0**	**2.1**	**2.4**	**2.1**	**2.3**
State subsidies only	**1.7**	**2.0**	**2.0**	**2.2**	**2.1**	**2.2**
Expenditures including benefits	**1.9**	**2.0**	**2.1**	**2.4**	**2.3**	**2.3**
Retirement and disability benefits only	**1.7**	**1.8**	**1.9**	**2.2**	**2.2**	**2.2**
Farmer's Social Insurance Fund						
Revenues (including state subsidies)	**1.5**	**2.0**	**2.0**	**2.1**	**2.2**	**2.0**
State subsidies only	**0.9**	**1.4**	**1.3**	**1.3**	**1.4**	**1.1**
Expenditures including unemployment benefits	**1.6**	**2.0**	**2.0**	**2.1**	**2.2**	**2.0**
Unemployment benefits only	**1.4**	**1.7**	**1.7**	**1.7**	**1.8**	**1.7**
Totals						
Revenues (including state subsidies)	**17.2**	**20.1**	**20.1**	**20.7**	**19.1**	**19.1**
State subsidies only	**5.3**	**7.7**	**7.5**	**7.5**	**5.6**	**5.3**
Expenditures including benefits	**17.7**	**19.8**	**19.8**	**20.6**	**18.8**	**19.2**
Total retirement and disability benefits	**12.6**	**14.6**	**14.6**	**15.4**	**14.6**	**15.2**

Source: Ministry of Finance

Rationalization is essential and should be introduced as quickly as possible. However, in the case of pension benefits, rationalization alone is neither *sufficient* nor *desirable*. It is not *sufficient* because social insurance reform should create new opportunities and perspectives for the generation which still has many working years ahead of it. Only then will that generation accept the reform. New horizons will show not only clouds of change, but also the rays of new opportunity.

Graph D: Relation Between the Population of Elderly Persons and Working Population, 1994-2020.

Based on GUS (unofficial)	1985	1990	1995	2000	2005	2010	2015	2020
Old - Age Population	4,486,000	4,903,000	5,310,573	5.612,219	5,700,410	6,091,315	6,977,109	7,906,412
Working Age Population	21,772,400	21,961,800	22,643,101	23,606,145	24,675,860	24,803,617	24,028,814	23,299,358
Ratio	20 60%	22.33%	23.45%	23.77%	23.10%	24.56%	29.04%	33 93%



Rationalization by itself is also not *desirable* because the present crisis is the crisis of all single-pillar pay-as-you-go (PAYG) pension systems is general. The PAYG system is decidedly more influenced by the labor market and political pressures, and demographic changes than the funded system. Thus, if a PAYG pension plan constitutes the sole element of a social security system, it is apt to react strongly to demographic, economic and political changes.

2. The outline of reform: the three pillars

For the above reasons, the reformed social insurance system should provide new opportunities for its participants and have a stabilizing mechanism which resists demographic and macroeconomic pressures. The multi-pillar system is such a system. A large role is played by the pillar of open pension funds, the 2nd pillar. In the

2nd pillar, individual contributions are capitalized and produce income. Simultaneously, the 1st pillar, or PAYG pillar, becomes much more transparent because a strong relationship between contributions and benefits is introduced. The additional and voluntary insurance and savings in the 3rd pillar, which already exists, also becomes more developed.

Such a system will make it possible to achieve the goal of the pension system, that is, the highest possible level of benefits for future generations. It will protect benefits against inflation and make them relative to prior earnings and contributions paid, while at the same time guaranteeing pensions for current retirees. With diversified sources of retirement income and new, stable, comprehensible rules, this system would provide hope and offer effective ways of counteracting unfavorable trends.

Under the new pension system, pension benefits will consist of two or three components - the universal PAYG pillar, the universal funded pillar and additional, voluntary insurance. Each of the pillars will operate in a specific, individual manner. Diagram 1 presents differences between the pillars from the perspective of two basic criteria - financing and operations.

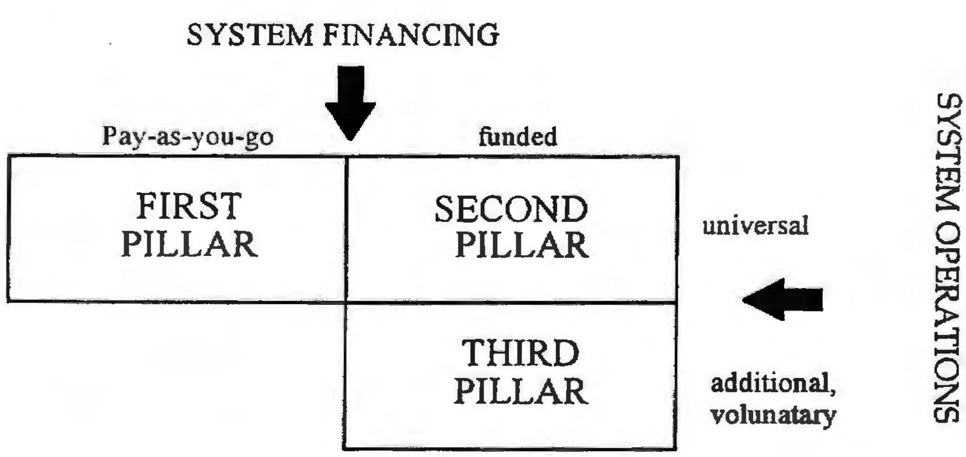


Diagram 1. Financing and operations of the social insurance system

Under the current system, the entire contribution of 45% of base compensation plus budget subsidies is used to pay retirement, disability, and other benefits. By contrast, in the future system, a significant portion of the contribution - 20% of the 45%, i.e., 9% of the wage bill will be transferred to open pension funds. ZUS, the social insurance agency, will serve as a transfer agent for these funds. This part of the system, the 2nd pillar, will be the funded pillar of the future pension system. The remaining part of the contribution will be allocated for current pensions and disability benefits, as well as other benefits within the PAYG system.

Important parts of the new system are the 3rd pillar, that is, voluntary insurance, and the minimum guaranteed pension.

Benefits received from the PAYG pillar will depend only on accumulated contributions and average life expectancy at the age of retirement. Average life expectancy will be calculated by the Central Statistical Office. A major element of this calculation is the pension age, or age at which people retire. Accumulated collected contributions will create notional capital for pension benefits. The amount of that capital will be recorded by ZUS on individual accounts starting with 1998. Compensation will serve as the basis for calculating contributions. Hence, an individual retirement pension would be accumulated capital divided by the average life expectancy expressed in months.

The age at which a participant retires will be an individual decision, once the participant has passed the minimum retirement age. The planned minimum retirement age for men and women will be 62[3]. This freedom to choose at what age one retires will motivate people to extend their working lives because each additional year worked would significantly increase their pension benefits. For example, if someone retires at the age of 63 and not at 62, the pension increases by approximately 7%, if at 65 and not at 64 the pension increases by 9%, and if at 66 instead of 65 the pension increases by some 10% more. In contrast, in the present system pension growth is fixed at 1.3% of the base amount per additional year of work.

An important element of the new social security system will be the minimum pension. This pension will be 28% of current average pay. The minimum pension will be indexed according to a principle analogous to that for other pensions. The requirements for obtaining a minimum pension will be meeting the age and years of service requirements. If a person's combined 1st and 2nd pillar pensions will be lower than the minimum state guaranteed retirement pension, then the state budget will pay the difference. Approximately 10% of pensioners are expected to receive supplements to reach the minimum level, meaning that they will not have „worked up" to the minimum state guaranteed level on their own.

Pension benefits will be indexed as they are now, i.e., is based on price increases calculated for the pensioner's basket of goods and services. Indexation of accumulated contributions in 1st pillar accounts will be based on growth of the wage bill.

[3] In the meantime, though, the Diet decided otherwise (eds.)

Then the accounts would depend on changes of average wage and employment. In the transition period, indexation of accumulated funds in the account might be slightly lower, but above inflation.

The 2^{nd} pillar will consist of pension funds. During the initial period, approximately 10-12[4] funds will be created. Participants will send part of their pension contribution to a selected fund. Participants in these funds will include all persons under thirty years of age at the time the reform is introduced. Participation will be optional for those between ages 30 and 50.

Pension will be the only benefit financed from the 2^{nd} pillar funds. Disability and survivorship pensions will remain in the 1^{st} pillar. Based on this assumption, and in light of the fact that approximately 24% of wages presently finance pension benefits, 60-65% of future pension benefits will originate from FUS, 1^{st} pillar, and 35-40% of future pension benefits will originate from the 2^{nd} pillar. Contributions will likely decrease from the present level of 45% to 38-39% in 2015. Since this decrease will affect contributions financing the 1^{st} pillar, the proportion of pension benefit derived from both mandatory pillars will tend to become even.

The contribution for both mandatory pillars will be accrued on income not higher than 250% of the average salary. Under the current system contributions are accrued on all income. In future, the ceiling will decrease as much as possible. Exempting part of income from contributions will provide an incentive for persons with higher incomes to voluntarily deposit money in insurance societies and investment funds, that is in the 3^{rd} pillar of the pension system. It will also encourage employers to employ more highly educated experts who will be relatively cheaper. On the other hand, any savings due to the introduction of a ceiling on contributions will affect the entire wage bill in a given company and so decrease labor costs.

A retiree will receive 2^{nd} pillar pension benefits from one of the specially licensed insurance companies. Money accumulated in the pension fund will be the common property of a married couple. In the case of divorce, the court will rule on its division. If a participant dies, his accumulated assets will be inherited according to particularly favorable conditions. His children will be able to receive benefits from those assets until they become legal adults or are 25 years old in the case of students. Pension benefits from the fund will be indexed according to principles which will not be less favorable than in the case of benefits paid by FUS.

[4] The number of funds is not presumed. The presented assessment takes into consideration capital requirements to establish a fund and other countries' experience in this area.

Second pillar contributions will be tax-exempt, as are contributions presently paid to FUS. However, income tax will bc paid on benefits. A pension fund's investment income will also be tax-exempt.

Pension funds will invest contributions under strict governmental supervision to assure that the assets are secure. Moreover, Universal Pension Fund Companies managing the funds and making investment decisions will not have custody of pension assets. Rather they will keep pension funds in an independent depository. Such a bank will need to have at least the equivalent of ECU 100 million of their own assets. The National Depositary (*Krajowy Depozyt Papierów Wartościowych S.A.*) will also be able to play the role of depository. Contributions received into a fund will be principally invested in publicly traded securities, including securities issued by the State Treasury and NBP (the central bank), bank deposits and participation units in investment funds.

If a person believes his expected pension benefits from the 1st and 2nd pillar will be too low, he may also save in investment funds, insurance societies and invest in securities. In addition, he may participate in pension programs organized by his employer. This will be the *3rd pillar* of the pension system, which already exists to a certain degree. The tax mechanism in this pillar is the reverse of that in the 2nd pillar: contributions would be on an after-tax basis, while benefits and income from investments would be tax-exempt.

Within the framework of a pension program an employer shall, with the employees' consent, withhold and transfer part of the employees' compensation as contribution to a joint stock life insurance company or a commercial insurance company group policy or contributions for buying units in open investment funds or shall finance employees' participation in a employee pension fund. From the employer's viewpoint, this payment will constitute a part of the employee's compensation and so will constitute a part of operating expenses. On the other hand, the employee will pay income tax on his own contributions or contributions paid on his behalf.

The reform program assumes rationalization of pension privileges of various vocational groups. Replacement of higher rate of accumulation privileges with one-time budget payments to employee pension programs will help the rationalization. For example, miner's unions could create their own vocational pension programs.

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The are two basic differences between the current and future pension systems. The first is the introduction of the funded pillar to the universal pension system. The second difference is that the present PAYG pillar will operate on the principle of a strict relationship between contributions and benefits and will be a pillar based on defined contributions, not defined benefits. Diagram 2 presents the difference between the old and the new system from the perspective of tax and compensation of participants. The assumed decrease in compensation deductions was not taken into account. The diagram illustrates that for those deductions to be comparable between Poland and other countries, calculations should be based on wages including the social insurance contribution, called gross calculations. In that case, the figures 45%, 36% and 9% correspond to 31%, 25% and 6%. In addition, the 24% of the wage bill currently financing pensions, corresponds to 16.5% of the wage bill.

Diagram 2. Proportions of tax on compensation in the present pension system and in the reformed pension system (in %)

PRESENT SYSTEM

	Net Compensation + Personal Income Tax + Social Insurance Contribution	Net Compensation + Personal Income Tax	Social Insurance Contribution to FUS
Gross Calculation	**145**	**100**	**45**
Net Calculation	**100**	**69**	**31**

REFORMED SYSTEM

	Net Compensation + Personal Income Tax + Social Insurance Contribution	Net Compensation + Personal Income Tax	Social Insurance Contribution to FUS	
			FUS - 1st Pillar	**2nd Pillar**
Gross Calculation	**145**	**100**	**36**	**9**
Net Calculation	**100**	**69**	**25**	**6**

3. Other benefits

With regard to other benefits currently paid from FUS, reforms will be based on a multi-fund model. Separate funds financing certain types of insurance risk and servicing and guaranteeing insurance will be created. In addition to the pension fund, paying also disability and survivorship benefits, following funds will be created:

A fund for insurance in the case of sickness and maternity leave

An injury fund, covering benefits relating to working accidents and occupational disease.

The fund for insurance in the case of disability, sickness and maternity leave

The fund will cover the following benefits:

- worker's compensation,
- pre-pension rehabilitation expenses,
- sickness benefits, and
- preventive care.

This fund would financially connect the risk of short-term disability due to illness with the risk of long-term work incapacity. This approach to insuring disabled workers is more complex. Disability pensions, the primary benefit of this fund, will continue to operate on the defined benefit principle.

The injury fund, covering benefits related to working accidents and occupational disease. The source of revenues will be contributions paid by employers. The contribution rate will depend on occupational risks and experience. The larger the occupational risks and the more frequent occurrence of work accidents and illness, the larger the contribution for worker's compensation insurance.

This division into funds supports the changes to the principles and procedures for awarding *disability pensions* and the creation of a pre-pension rehabilitation system. The key principle is to tie the right to disability benefits to the inability to work, and not to a change in the state of one's health. Therefore, conferring complete disability benefits will be granted only in the case of complete incapacity to work. If there is a prognosis that the employee's health may improve, the employee will receive temporary benefits. When ability to work in the previous profession is reduced at least by half, the employee will receive a partial benefit. Other beneficiaries will receive training benefits to take up another profession whenever they are capable of working in another profession. Other system changes will follow, including authorizing persons to make decisions concerning disability and the creation of a pre-pension rehabilitation system.

The new multi-pillar retirement system should also be available for *private farmers* who are presently insured at Farmers' Social Insurance Fund (*Kasa Rolniczego Ubezpieczenia Społecznego* - KRUS). The pension reform plans to introduce a system for the group of richer farmers similar to that for self-employed working outside agriculture, as well as to continue to finance social assistance for other farmers. Farmers in the first group would pay a differentiated contribution, divided between the 1st and 2nd pillars, as with the employee system. A minimum contribution would be introduced. Farmers in the second group, not paying contributions equivalent to benefits, would remain in the KRUS system, which is in fact a social assistance system. Subsidies to KRUS would be decreased in proportion to the first group to farmers leaving the system and the decrease in the number of persons working in agriculture.

The selection of contribution basis is thus important to reforming the social insurance system for farmers. The lump-sum contribution would be used for poorly capitalized farms where it is difficult to differentiate between income, investments and consumption. For larger, well-capitalized farms, the contribution base would be average income over several years, as in the case of farmers running special activities.

Hired agricultural laborers would pay contributions according to the general rules for workers. However, benefits in kind, such as housing and meals, would also be part of the lump-sum contribution earnings base. All persons declaring that they benefit from a farm as family members and acquiring pension rights, through years of service, should also make contributions. The mandatory contributions would vary in relation to declared earnings. However, the majority of retirement rights will depend on accumulated pension contributions.

Farmers with pension rights below the minimum would receive a subsidy up to that minimum. However, that subsidy should be awarded *on the basis of secured assets*, for instance land, buildings, machinery. Therefore, payments up to the minimum retirement benefit would be a life-long transfer in exchange for the assets or a loan in exchange for a mortgage. The size of the deduction at the time of death would depend on the total paid in the form of subsidies and benefits. People could choose to receive benefits below a minimum level or to receive higher benefits under the condition of a lien on their property.

The proposed changes would not only rationalize people's approach to minimum retirement, but would also facilitate the restructuring of agriculture by combining pieces of land and increasing the size of the average farm. The minimum retirement level would not be uniform for all persons because living costs are lower in rural areas. In urban areas, the costs of housing and food often exceed half of the household budget. The living cost coefficients, depending on residence, would be created in order to determine differences between minimums. Scale effects would also be considered, in that the minimum paid to a second person in a household may be lower than that paid to the first person, as in the case of the social assistance system.

Pension benefits for the *uniformed services* (military and police) are a separate issue. As in many other countries, they are financed in a special manner – the uniformed services do not pay social insurance contributions. Although, as we have stressed, everyone should be included in the universal system, we are not proposing any radical reform for the uniformed services pension system. However, we do think that their reform should be guided by the principle of decreasing differences in the functioning and financing of uniformed services retirements and general system retirements. Therefore, the government should continue its recent efforts to introduce general indexation rules for the uniformed services pension system.

4. From the beneficiary's point of view

From the perspective of beneficiary, the main difference between the old and the new system will be *significantly greater freedom of choice* coupled with a *high degree of safety*. A worker will be able to choose the pension fund to which he will entrust his savings. He will also be able to transfer his savings from one fund to another relatively easily, and to buy voluntary insurance in order to assure himself a higher retirement. He will also decide upon the age at which he wishes to retire.

The new system will be a *safe* system. This safety will result from conscious investment choices about the needed future pension. The State will supervise pension funds to assure their safety. Finally, stability will be increased yet by diversifying the sources of retirement income among the various pillars, including funds and long-term savings programs.

Future pensioners, participants of the new system, may expect to receive approximately 60-62% of their compensation from the 1st and 2nd pillars during the initial period of the new system's operation, on the assumption that they retire at age 62. About two thirds of the pension will originate from the 1st pillar, while the rest – from the 2nd pillar. This division is typical in developed economies. In later years, this proportion, the *replacement rate*, will decrease due to the growth in real worker and beneficiary income and ideally will reach the level of about 50%. Decreasing the contribution level will result in a lower replacement rate in the future. However, one of the most important elements of the reform is that employees who decide to work longer may expect a significant increase in their retirement for each additional year worked. In other words, the replacement rate will reach 76% from both pillars at the retirement age of 65, significantly exceeding the present replacement rate of 67%. We must bear in mind, though, that the present replacement rate is achieved with the current, very low, retirement age. This low retirement age should not and cannot be maintained, as it is at the cost of the insured. In the reformed system, workers who decide to work until they are 70 years old will receive a retirement pension exceeding their earnings. The projected replacement rate at the age of 70 is 107%, assuming current life expectancy. These projections do not account for retirement benefits received from the 3rd pillar whose role will systematically increase. Thus, the replacement rate may reach even higher levels.[5]

The replacement rate is also affected by the minimum pension and maximum contribution limits. A minimum pension raises the replacement rate for those whose pension based only on their accumulated contributions would be lower than the minimum. Everyone who formally received the minimum salary after having worked and contributed to social insurance to 25 years, upon reaching the necessary retirement age, assumed to be 65 for both sexes, will be entitled to receive at least the minimum old age pension. This minimum pension will be approximately 28% of average salary. If we were to follow current indexation, the resulting minimum pension would be clearly lower, in real terms, than the one proposed here.

Just because a person has reached the minimum age does not automatically mean that the person has the right to a minimum pension. In some cases, persons with low earnings may want to retire at the minimum age in spite of the fact that they have not acquired the right to a minimum pension. For instance, they may have other income. In summary, the replacement rate will be significantly higher for the group of society which earns very little.

An upper limit on contributions will be set for those who earn more than 250% of average pay. Those persons will be required to make contributions only up to the legal maximum level. Hence, the group of persons with the highest earnings will have a below average replacement rate for the first two pillars. However, the replacement rate will be equally high if it is calculated based on the 250% average salary ceiling, and not just final pay.

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[5] However, the retirement benefits from the reformed 1st pillar will be paid starting from the year 2011.

As previously mentioned, considering GDP growth and wages and salaries as percentage of GDP, in the long run the ideal replacement rate in the 1st and 2nd pillars will be about 50%. This replacement rate demonstrates a decrease in the mandatory portion of the retirement system and an increase in the voluntary portion as real wages and society's wealth grow. Every person will be able to increase the replacement rate on his own through additional savings. The above concept will make it possible to lower social insurance contributions. This reduction will favorably affect the economic growth and competitiveness of the economy and will bring about advantages for beneficiaries.

The new system will be significantly more *transparent* and *comprehensible*. Half of the contribution will be paid by employers and half by employees. Workers will be regularly informed of their contributions and their resulting rights. In the present system, the contribution is paid by the employer and the employee need not be aware of the fact. However, regardless of the fact that the employer technically pays the contribution, the employee also bears the cost of the contribution through lower net wages.

Workers will receive information about their retirement accounts and about contributions paid on their behalf two or three times a year. For the PAYG pillar, workers will be informed of the amount accumulated in their accounts, receive detailed information about FUS, and be notified about the expected size of their pensions for various retirement ages. Additionally, employees will be kept informed on the amount of pension benefits if both salaries and the macroeconomic situation were not to change until they reach retirement age.

With respect to contributions made to the funded pillar, ZUS will provide the following information:

1) contributions to the pension fund selected by the worker,
2) the name of that fund, and
3) whether membership to that fund was the choice of the worker or by default.

Those workers who do not choose a pension fund themselves will be assigned to a fund based on decision rules. Such rules might dictate a randomly chosen fund with probability proportional to the number of participants. Workers will receive information concerning the activity of a selected fund directly from the fund. That information will include data about the fund's investments and rate of return. As in the 1st pillar, contributors will be able to calculate their benefits in the 2nd pillar.

When a fund participant reaches retirement age and decides to retire, his assets accumulated in a pension fund will allow him to receive life-long retirement benefits. He will choose an annuity from one of the specially licensed insurance companies. In the case where the retiree fails to choose an insurance company, there will be a mechanism to make the choice automatically. Receiving a life annuity will be the only use of assets saved in a pension fund. The part of retirement benefits originating from the PAYG pillar will be paid through ZUS, as is presently done.

In the case where a disability pensioner retires, his disability benefits will automatically be converted into retirement benefits.

5. The transition period

A long transition period will be required before the new system covers all workers. In the PAYG pillar, new solutions will affect neither persons above age 50 during the first year of reform nor those who meet the requirements for early retirement. Those with the right for early retirement are those who worked the minimum period in special conditions. Others who work in such special conditions and will retire early within three years from introduction of the new system will also not participate in the new system. The new system covers all other persons below age 50.

The new system's coverage of all persons under age 50 who do not meet the conditions for early retirement means that those people's special rights will be eliminated because these rights are inconsistent with the new system. However, additional contributions paid by employers or the State budget may be a continuation of those rights.

Today, almost all employees under 35 years of age are not yet entitled to early retirement rights in specific industries and will not acquire such rights within 3 years, thus they will lose those rights in the future. In total, 24% of all employees have currently these rights.

We propose to eliminate the early retirement privilege for 55-year old women. We also propose to eliminate the early retirement option, 5 years earlier, for persons with category I and II disabilities. Those who cannot work will receive a disability pension. Finally, the plan will forbid *early* retirees from working.

These changes are fair and justified because the cost of early retirement is borne by all insured in the form of higher employee contributions and lower indexation for pensioners who really cannot work. These changes should bring about positive effects to the budget and help clarify the system.

A simple and approximate calculation of savings from liquidating early pension is as follows:

- average contribution earning base - 114% of average pay, that is, approx. 1,030 zloty in 1996

- average years of service - 33 years
- average pension - 644 zloty monthly, 7,728 zloty annually.

Assuming 120,000 persons retire early each year, after eliminating the early retirement benefits over 6 years approximately 20,000 fewer persons would retire each year. In the first year, savings from a lower number of retired persons would amount to 154.6 million zlotys and would amount to the same figure for the next five years. After six years, the number of awarded pension benefits would increase by the number of those who were denied privileges in the first year. In the following years, that number would increase in accordance with demographic trends.

An extension of the number of years worked would lead to increased income from contributions. It may be assumed that the average base for determining contributions for pre-pension aged persons is equal to the base for determining benefits, that is 114% of average salary. During the course of a year, 5,562 zloty would be received from one person and 111.2 million zloty would be received from 20,000 persons. The average pension paid for those persons would amount to 724 zloty monthly, or 8,688 zloty annually. In addition, the period of payment of pension benefits would decrease by 5 years in the case of women and by 3.65 years in the case of men.

In this context, it is worth noting that rights to industrial retirement partially overlap with rights to early retirement for women, so the elimination of the latter does not necessarily imply a sudden, significant decline in the number of women retiring before the age of 60.

A majority, 75-80%, of persons with special pension privileges, or 18-19% of the number of persons retiring each year, will fulfil the conditions for early retirement when the reform is implemented. Hence, even if all early retirement programs were eliminated immediately, the number of early retirees would gradually decrease over 30 years from today's level to zero. Therefore, there will be a long transition period, until all employees participate fully in the new PAYG pillar.

The length of the transition period for the 2nd pillar will depend on the option selected for *transferring into the new system*. Transition to the new system means dividing the contribution paid by employers into two parts: 80% will remain in FUS and 20% will be directed to an employee selected pension fund. We have considered several transition alternatives. Two of these alternatives seem feasible in terms of financing:

Alternative I: All employed persons under 30 years of age will be required to move to the 2nd pillar. Persons 31 years or older will not participate in the 2nd pillar. However, they will participate in the new 1st pillar and have significantly greater opportunities to participate in the 3rd pillar due to the 250% of average salary contribution limit in the 1st and 2nd pillars. The transition period for this option will last 30 years;

Alternative II: All persons entering the labor force must enter the new system, while those aged 50 and younger may choose to switch to the new system. In this case, the transition period will last approximately 45 years.[6]

Both alternatives assume that certain groups of employees must enter the new system, although these groups will be different in each alternative. Participation in the two-pillar system is mandatory for the same reasons the PAYG retirement systems is required in the majority of countries. The 1st and 2nd pillars of universal insurance will only undergo asset management changes, although no changes will be made to the form or amounts of assets. Both the contribution and the method of its collection will remain the same. However, the reform will introduce new motivation to participate, supervising instruments for asset management and benefit distribution processes. Thus, the insured themselves will control the risks associated with future benefits.

Alternative I appears to be better for several reasons. The major reason is to avoid a situation whereby persons who do not have a large chance to take advantage of the system would enter the system, and the persons who have a large chance to take advantage of the new system do not enter it. Moreover, the point is to avoid a situation whereby only relatively wealthy people would enter the new system and poorer people would remain outside of it. The following factors are also important:

- easier estimation of the number of persons switching over to the new system, and thus predictability of costs from the division of the contribution and the transfer of a part of the contribution to the fund,
- acceleration of the entire operation, understood as the retirement of the last person in the old system, which implies lower costs of maintaining two systems and a shorter transition period.

If all persons up to 30 years of age are obliged to enter the new system, then beginning with the year 2020, the number of retired persons not participating in the mandatory two-pillar system will significantly decrease. That process will acceler-

[6] This time period may be even longer as some, though certainly not many, of the 17, 18 and 19 year-olds at the time of introducing the reform may decide to stay within the old system.

ate in 2025. Then, the costs of maintaining the old system will begin to decrease and it will be possible to further lower contributions.

Both alternatives have financial consequences understood as the creation of a gap due to the loss of part of the contribution which has financed benefits until now. During the first dozen or so years of the new system, the annual lost contributions will be approximately 1% of GDP for alternative I and 0.5% of GDP for alternative II during the first years of reforms and approximately 2% of GDP for alternative I and 1.2% of GDP for alternative II in the seventeenth year of reforms.

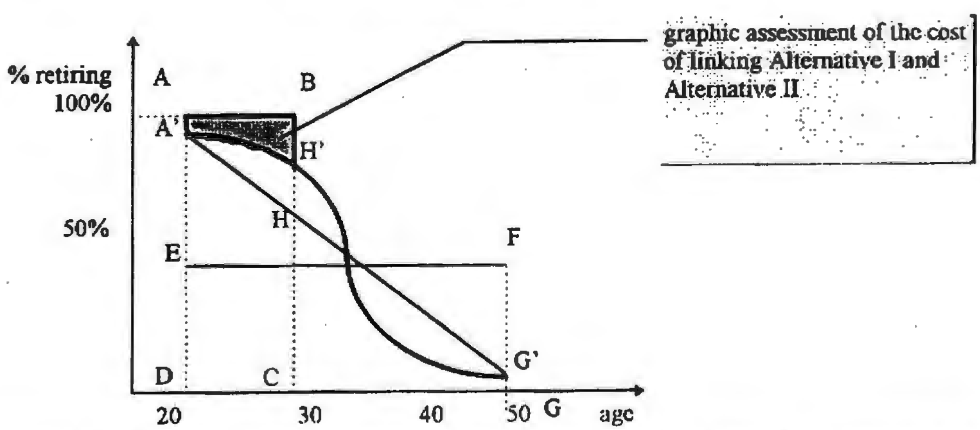
An in-depth analysis of both alternatives allows for a conclusion that they are in a great part complementary and so may supplement each other. Thus, a third alternative is proposed, based on the assumption that the majority of young people decide to invest in funded pensions. If everyone up to 30 years of age is included in the reforms on a compulsory basis, the result would be only a minor increase of cost of introducing the 2nd pillar in alternative II.

Table 2. The gap between the obtained and required contribution in the PAYG pillar with regard to proposed alternatives

Year	Alternative I whole population up to age of 30	Alternative II half of population aged 20-50	Solution III average	Alternative I whole population up to age of 30	Alternative II half of population aged 20-50	Solution III average
	GDP growth rate of 1.5%	**GDP growth rate of 3%**				
2000	**-1.66%**	**-3.45%**	**-2.56%**	**-1.66%**	**-3.45%**	**-2.56%**
2201	**-1.44%**	**-3.11%**	**-2.28%**	**-1.21%**	**-2.89%**	**-2.05%**
2002	**-0.79%**	**-2.34%**	**-1.57%**	**-0.36%**	**-1.91%**	**-1.14%**
2003	**-0.50%**	**-1.90%**	**-1.20%**	**0.13%**	**-1.27%**	**-0.57%**
2004	**0.00%**	**-1.24%**	**-0.62%**	**0.80%**	**-0.44%**	**0.18%**
2005	**0.42%**	**-0.65%**	**-0.11%**	**1.39%**	**0.32%**	**0.85%**
2006	**0.43%**	**-0.44%**	**-0.01%**	**1.57%**	**0.70%**	**1.13%**
2007	**0.68%**	**0.03%**	**0.36%**	**1.97%**	**1.32%**	**1.65%**
2008	**0.84%**	**0.44%**	**0.64%**	**2.27%**	**1.87%**	**2.07%**
2009	**0.60%**	**0.46%**	**0.53%**	**2.20%**	**2.07%**	**2.14%**
2010	**0.64%**	**0.77%**	**0.70%**	**2.38%**	**2.51%**	**2.45%**
2011	**0.64%**	**1.05%**	**0.84%**	**2.51%**	**2.92%**	**2.72%**
2012	**0.27%**	**0.96%**	**0.62%**	**2.32%**	**3.01%**	**2.66%**
2013	**0.24%**	**1.21%**	**0.72%**	**2.41%**	**3.38%**	**2.90%**
2014	**0.20%**	**1.44%**	**0.82%**	**2.50%**	**3.74%**	**3.12%**
2015	**-0.46%**	**1.32%**	**0.43%**	**2.00%**	**3.79%**	**2.90%**
2016	**-0.23%**	**1.56%**	**0.66%**	**2.35%**	**4.14%**	**3.25%**
2017	**-0.25%**	**1.79%**	**0.77%**	**2.45%**	**4.49%**	**3.47%**

The gap between the obtained and required contributions in the PAYG pillar with regard to proposed alternatives is presented in Table 2.

Distribution in time of the cost of the reform according to alternative III will be the average of alternative I and alternative II. That means that the additional cost between the obtained and required contributions would initially be greater than in alternative I and smaller than in alternative II. From 2010 onwards the relation will be inversed. The cost of alternative III will be included in the zone between costs of alternative I and II. Of course, one has to account for the fact that not all of the alternative II people aged less than 30 would choose to transfer to the new system. Therefore, the cost of alternative III would be slightly higher than expected on the basis of our previous assumptions. However, additional cost would not be significant.



Graph E. Comparison of the scale of expences resulting from the transfer of a portion of the contribution to the second pillar (Alternative I, II, and III)

This cost is clearly presented in Graph E. The area of rectangle ABCD represents costs of alternative I; the area of rectangle DEFG represents costs of the initial version of alternative II, with the tendency to transfer to the 2nd pillar regardless of age. However, if we take into account that the inclination to transfer to the 2nd pillar decreases with age, the area A'DGG' represents the cost of alternative II. The form of area A'DGG' depends on the tendency to transfer to the 2nd pillar. The graph presents two scenarios in transfering to the 2nd pillar: linear and inversed logistic. The linear course would give us the upper limit of assessment for the additional cost resulting from linking alternative I and II. Assuming the numbers in the cohorts are identical, additional cost is no greater than the proportion of area AA'HB to area A'DGG', which is about 10%. In practice the tendency to transfer should be more strongly dependent on age, so additional cost should be relatively smaller as the course of the curve A'G' is similar to the expected actual course of transfer to the 2nd pillar. This is presented on the graph by shading area AA'H'B. Thus, combining the first and second alternatives would not result in a cost increase of greater than 10%.

Thus, we suggest alternative III, whereby participation in the 2nd pillar would be compulsory for everyone up to 30 years of age and voluntary for persons between 30 and 50. Alternative III allows linking the merits of alternative I and II, that is the freedom of choice and participation od people aged 31-50, as well as avoiding a negative selection among those who transfer to the funded pillar and shortening the transition period. Nevertheless, forecasting the actual number of the transferred will be unavoidably uncertain. We may forecast this number by applying different techniques. For instance, we can examine different alternatives for the transfer to the 2nd pillar depending on individual characteristics of persons aged 31-50.

The tables shown at the end present the summary financial effects the social insurance reform will have on the Social Insurance Fund and methods of financing those effects. Even with very conservative or pessimistic assumptions regarding the rate of economic growth (Table 3), the Social Insurance Fund will be balanced in the first half of the first decade of the 21st century. A financial short-fall of approximately 0.5% of GDP per annum will be observed only beginning with 2010. However, as Table 4 shows, the Social Insurance Fund will remain balanced if we assume a more realistic economic growth of 3% yearly on the average.

Table 3. Financial effects of the reform of the pension system and methods of their financing - 1.5% GDP growth

		2000	2005	2010	2017
Financial effects of the social insurance system reform - contributions decrease					
Shifting 20% of the contribution to the 2nd pillar, for everyone under age 30 and half of those aged 30-50	**%GDP** **PLN m**	**0.68%** **2,559**	**0.87%** **3,534**	**1.09%** **4,773**	**1.39%** **6,722**
250% contribution ceiling	**%GDP** **PLN m**	**0.35%** **1,308**	**0,35%** **1,409**	**0.35%** **1,517**	**0.35%** **1,684**
Standard rules for establishment of minimum contribution base for self-employed	**%GDP** **PLN m**	**0.22%** **839**	**0.22%** **904**	**0.22%** **974**	**0.22%** **1,081**
Subsidies to pension benefits below minimum	**%GDP** **PLN m**	**0.00%** **0**	**0.00%** **0**	**0.00%** **0**	**0.028%** **137**
Outflow to the 3rd pillar - participation of employees in this form - 25%	**%GDP** **PLN m**	**0.23%** **880**	**0.23%** **948**	**0.23%** **1,021**	**0.23%** **1,134**
Subtotal A	**%GDP** **PLN m**	**1.48%** **5,586**	**1,68%** **6,794**	**1.90%** **8,285**	**2.22%** **10,757**
Financing the effects of the reform					
Savings related to rationalization of the PAYG pillar, with growing real value of benefits	**%GDP** **PLN m**	**0.00%** **0**	**0.92%** **3,720**	**1.38%** **6.031**	**1.70%** **8,324**
Income from privatization	**%GDP** **PLN m**	**1.9%** **7,153**	**1.9%** **7,706**	**0.0%** **0**	**0.0%** **0**
Subtotal B	**%GDP** **PLN m**	**1.90%** **7,153**	**2.82%** **11,426**	**1.38%** **6.031**	**1.70%** **8,234**
Balance (subtotal B - subtotal A)	**%GDP** **PLN m**	**0.42%** **1,568**	**1.14%** **4,632**	**-0.52%** **-2,254**	**-0.52%** **-2,253**

Assumptions (Table 3)

- Increase of GDP and wage bill: 1.5%
- Limit for the 3rd pillar tax relief: 7%
- Share in wage bill of salaries over 250% (surplus only): 2.6%
- Number of pensioners receiving subsidies to minimum pension: 60,000
- Average subsidy to minimum pension: PLN 190
- Decrease in minimum contribution from self-employed from 60% of average salary to minimum pay (approximately 40% of average salary)
- Constant share of wage bill in GDP
- Constant share of contributions from self-employed in GDP
- Constant distribution of salaries in relation to age
- Constant 1996 prices

PLN m – million Polish złotych

Table 4. Financial effects of the reform of the pension system and methods of their financing - 3% GDP growth

		2000	2005	2010	2017
Financial effects of the social insurance system reform - contributions decrease					
Shifting 20% of the contribution to the 2nd pillar, for everyone under age 30 and half of those aged 30-50	%GDP PLN m	0.68% 2,714	0.87% 4,032	1.09% 5,861	1.39% 9,148
250% contribution ceiling	%GDP PLN m	0.35% 1,387	0,35% 1,607	0.35% 1,863	0.35% 2,292
Standard rules for establishment of minimum contribution base for self-employed	%GDP PLN m	0.22% 890	0.22% 1,031	0.22% 1,196	0.22% 1,470
Subsidies to pension benefits below minimum	%GDP PLN m	0.00% 0	0.00% 0	0.00% 0	0.029% 188
Outflow to the 3rd pillar - participation of employees in this form - 25%	%GDP PLN m	0.23% 933	0.23% 1,082	0.23% 1,254	0.23% 1,543
Subtotal A	%GDP PLN m	1.48% 5,923	1,68% 7,753	1.90% 10,174	2.22% 14,641
Financing the effects of the reform					
Savings related to rationalization of the PAYG pillar, with growing real value of benefits	%GDP PLN m	0.00% 0	1.21% 5,578	1.90% 10,193	2.50% 16,474
Income from privatization	%GDP PLN m	1.9% 7,586	1.9% 8,794	0.0% 0	0.0% 0
Subtotal B	%GDP PLN m	1.9% 7,586	3.11% 14,372	1.90% 10,193	2.50% 16,474
Balance (subtotal B - subtotal A)	%GDP PLN m	0.42% 1,662	1.43% 6,619	0.00% 19	0.28% 1,833

Assumptions (Table 4)

- Increase of GDP and wage bill: 3%
- Limit for the 3rd pillar tax relief: 7%
- Share in wage bill of salaries over 250% (surplus only): 2.6%
- Number of pensioners receiving subsidies to minimum pension: 60,000
- Average subsidy to minimum pension: PLN 262
- Decrease in minimum contribution from self-employed from 60% of average salary to minimum pay (approximately 40% of average salary)
- Constant share of wage bill in GDP
- Constant share of contributions from self-employed in GDP
- Constant distribution of salaries in relation to age
- Constant 1996 prices

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