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REDEFINING RETIREMENT: THE FINANCIAL REALITIES FOR ZUS POST-SOCIAL SECURITY REFORM

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Abstract: Social insurance plays a pivotal role in the Polish social security system, safeguarding individuals against various life risks such as old age, disability, loss of the primary breadwinner, illness, maternity, and workplace accidents or occupational diseases. This essential safety net has been administered by the Social Insurance Administration (ZUS) since 1933. Initially a central state administration body, ZUS transitioned to a state organizational unit with legal personality in 1999, in line with updated legal frameworks. Even under this new structure, ZUS retains the authority to employ legal measures typically vested in state administration bodies.

Notably, the establishment of the Social Insurance Trust Fund (FUS) several decades ago marked a significant development. The FUS serves as the financial backbone for social benefits disbursed by ZUS, and its stability is further bolstered by state budget allocations. This financial support ensures the full payment of benefits, even in cases where social insurance contributions fall short.

This paper delves into the evolution and dynamics of social insurance in Poland, shedding light on the pivotal role of ZUS and the critical safety net provided by the Social Insurance Trust Fund.

Keywords: Social Insurance, Social Security, Social Insurance Administration (ZUS), Social Benefits, Social Risk Protection

Introduction

Social insurance, as an element of the Polish social security system, is to protect individuals against such risks as old age, inability to work, death of the so-called breadwinner, illness, maternity or accidents at work and occupational diseases. The Social Insurance Administration (ZUS) has been responsible for protection against such social risks in Poland since 1933. ZUS was the central state administration body until 1998, and since 1999 it has been a state organizational unit with legal personality. After the change of the legal basis for the functioning of the Social Insurance Administration (ZUS), this institution is still entitled to use legal measures of competent state administration bodies. A few dozen years ago, the Social Insurance Trust Fund (FUS) was established to finance social benefits paid by ZUS. The Fund is guaranteed by the state budget by ensuring 100% payment of benefits in the event of a shortage of funds from social insurance contributions.

Table 1. Scope of ZUS responsibilities before and after the reform in 1999

Responsibilities of ZUS before the reform

Responsibilities of ZUS after the reform

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|--|--|
| 1) establishment and determination of the social security obligation | 1) establishment and determination of the social security obligation |
| 2) determination of rights to social insurance benefits and payment of these benefits | 2) determination of rights to social insurance benefits and payment of these benefits |
| 3) calculation of the withholding rate and collection of social security contributions | 3) calculation of the withholding rate and collection of contributions for social insurance, health insurance, Labor Fund, Guaranteed Employee Benefits Fund |

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|---|---|
| 4) settlements with employers, cooperatives or socio-occupational organizations (contribution the contributions to be withheld and in regard to benefits paid by them, which are subject to be financed by ZUS security funds or from other sources | 4) settlements with contribution withholders in regard to benefits paid by withholders) in which are subject to be financed by ZUS security funds or from other sources |
| 5) keeping track of social security contributions and controlling employers, contributors' accounts | 5) maintenance of personal pension accounts and Cooperatives or socio-occupational organizations in |
| 6) issuing opinions on draft legal acts fulfilling their social security obligations regarding social security | 6) issuing opinions on draft legal acts fulfilling their social security obligations regarding social security |
| 6) prevention policy of disability benefits | 7) promotion of information regarding social security |

Source: In-house study based on the basis of Article 11 of the Act on the organization and financing of social insurance of 25.11.1986, Official Journal of Laws 1986.42.202 and Article 68 of the Social Security System Act of 13.10.1998, Official Journal of Laws. 1998.137.887.

The results of the comparative analysis show that the scope of tasks of the state authority fully responsible for carrying out all social security tasks in Poland was extended after the reform and many other social security functions were added, thus increasing the role and responsibility of ZUS for the effective functioning of the social security system so much that it is disproportionate to the organizational and practical capabilities of this institution, which certainly impacts its effective operation. The primary problem of the Social Insurance Administration, though, is defective construction of the Polish social insurance system, which does not allow to create a balance between income and expenditure, because the reform was incomplete, implemented too quickly and negligently, and its program contained many systemic and parametric errors, which in effect caused serious financial problems of the Social Insurance Administration (ZUS).

Research methodology

The study was based on a fundamental assumption of a need to improve the financial effectiveness of ZUS through the reconstruction of the social security system. The effectiveness is treated as one of the basic categories used to describe the functioning, and to determine the likelihood of continuance and development of all systems (Gospodarowicz M., 2010). In practical terms, the essence of effectiveness boils down to the examination of the relationship between the total effects (results) of the actions and the costs incurred for the implementation of such actions using a quotient or differential formula (Czechowski L., 1997). This approach to effectiveness may also be used to evaluate social insurance system by modifying its elements according to the rule that outlays are the sum of financial resources accumulated in the system, and the effects are the sum of all benefits paid to eligible individuals according to the criteria defined by the system's creator. The financial effectiveness of ZUS, i.e. in fact of the social insurance system, should be based on the actuarial account, i.e. it should boil down to the application of a principle that the outlays (premiums) should balance, or exceed, the effects, i.e. benefits paid out to the beneficiaries. To achieve such status it is necessary to balance the income and expenditure in the system, i.e. the discounted value of all premiums paid into the system over all months of insurance (in a given year),

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increased by reserve funds, if any (or the initial debt of the system) must equal the current discounted value of all benefits paid. This can be expressed by the following formula:

$$R_0 + \frac{1}{(1+r)^n} \sum_{i=1}^m \sum_{j=1}^n C_{ij} = \frac{1}{(1+r)^{n+s}} \sum_{k=1}^p \sum_{l=1}^s b_{kl}$$

where:

R_0 – reserve money or initial debt upon the implementation of the scheme,

c_{ij} – value of the contribution paid by the i -th payer in " j " period, b_{kl} – value of the benefit paid to the k -th individual in the " l " period,

r – rate of return (depending on the system, the rate of return on investment or the rate of growth of the wage fund)

m – number of social security system contributors, n – number of contribution periods,

p – number of social security system beneficiaries,

s – number of benefit collection periods (Safety Through Diversity, Reform of the Pension System in Poland, 1997).

The ratio of income (contributions) to expenditure (benefits and administrative costs) in the social insurance system presented in the above formula is an optimal state, however, the actual status of these variables is demonstrated by so-called financial effectiveness of the social insurance system. The formula for the financial effectiveness of the social security system can be defined as follows:

for $S_k \geq S_w + K f(Se) \geq 1$ effective (insurance) system

for $S_k < S_w + K f(Se) < 1$ ineffective (insurance + provision = hybrid) system

Where:

$f(Se)$ – financial effectiveness of the social security system,

S_k – social security contributions, S_w – benefits paid out of the scheme, K – administrative costs (Garbiec, 2013).

The implementation of this assumption (balance between contributions and benefits paid) would ensure effective functioning of ZUS. Unfortunately, as the figures presented below show, this balance has never been achieved over the last 30 years.

Research findings

Problems related to the functioning of social security systems are one of the basic issues of social security. European solutions in this area result from social policy models implemented by governments. Since 1989 in Poland a model of social market economy focused on: labor market reform, public expenditure savings and adoption of European social strategies has been implemented (Karpowicz E., 2006).

Conceptual assumptions of the reform of 1999

The reform of social security, introduced on an urgent basis (without having been properly prepared) in 1999, consisted, among other things, of:

- approval of a possibility to change the amount of contributions for different types of social insurance in the event of shortage of funds in a given type of insurance,
- extension of responsibilities of the Social Insurance Administration (ZUS) and change of the legal rule governing its operation,

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- change of pension insurance provided by the public social security system by replacing the defined-benefit system with a defined-contribution system,
- determination of the degree of risk and making the amount only of contributions for accident insurance dependent on such risk.

The fundamental reason for implementation of the reform was growing financial deficit of ZUS and possible increase of prospective beneficiaries (population ageing). The primary aim of the reforms was balancing of the income and expenditure of the Social Insurance Administration (ZUS) and reducing the amount of benefits paid out from the public pension system.

System financing prior to the reform

In order to analyze the effectiveness of the Polish social security system administered by ZUS, the data illustrating the extent of participation of the state budget (the financial guarantor of FUS) in financing the system prior to the implementation of the 1999 reform are presented below. Table 2. FUS budget deficit prior to the 1999 reform

Year	Proportion of state money paid to FUS [mln \$] ¹	Statebudgetrevenues [mln \$]	Share of state money paid to Social Insurance Trust Fund (FUS) in total state budget revenues (in %) (state revenues =100.00 %)
1991	2345.89	22198.42	10.56
1992	3112.10	23453.43	13.23
1993	2764.78	25296.77	10.92
1994	3495.55	27776.55	12.58
1995	2464.93	34533.08	7.13
1996	2168.58	36964.58	5.86
1997	2448.97	36506.94	6.70
1998	2302.48	36225.20	6.35

1-The deficit value was calculated using the weighted average annual price of the U.S. dollar.

Source: In-house study based on www.zus.pl and the Statistical Yearbook of the Republic of Poland for the years 1990-2017 and www.nbp.pl/home.aspx?f=/kursy/arch_a.html

The proportion of state budget subsidies to ZUS was the main reason for the reform in 1999, and its implementation was supposed to assure balancing of income and expenditure of the Social Insurance Fund in the foreseeable future. As the above data show, the share of the state money in financing of the social security system before the reform, although considerably high, was gradually decreasing, which contradicts a need of radical changes in the system promoted at that time.

System financing after the 1999 reform

The size of the financial deficit (understood as a difference between contributions and expenditure on benefits) of the Social Insurance Trust Fund after the implementation of the reform, and the scale of state participation in financing social security benefits in Poland is presented in the table below.

Table 3. FUS budget deficit after the 1999 reform

Year	Proportion of state money paid to FUS [\$ mln] ¹	Statebudgetrevenues[\$ mln]	Share of state money paid to Social Insurance Trust Fund (FUS) in total state budget revenues (in %) (state revenues =100.00 %)

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1999	7512.41	31738.33	23.66
2000	4620.49	31212.95	14.80
2001	6288.28	34325.94	18.31
2002	7505.11	35180.78	21.33
2003	8211.98	39114.14	20.99
2004	9177.61	42769.84	21.45
2005	10168.66	55574.37	18.29
2006	12217.40	63703.46	19.17
2007	11515.16	85433.18	1.,47
2008	21872.32	105241.15	20.78
2009	20842.30	87986.32	23.68
2010	23697.18	82999.96	28.55
2011	21636.73	93661.67	23.10
2012	16250.81	88300.58	18.40
2013	19249.49	88316,56	21,79
2014	19209.43	89868.14	21.37
2015	14906.66	76692.13	19.43
2016	13509.64 ²	79806.24	16.92
2017	9732,27 ²	77287,34	12,59

1- The deficit value was calculated using the weighted average annual price of the U.S. dollar.

2- The sum of contributions transfered by open pension funds' participants to the social insurance fund (as a result of the reform from 2015) amounted 891.1 million USD in 2016 and 1627.50 million USD in 2017.

3- Source: In-house study based on www.zus.pl. and the Statistical Yearbook of the Republic of Poland for the years 1990-2017 and www.nbp.pl/home.aspx?f=/kursy/arch_a.html

According to the data presented in the table, the reform of the Polish social security system implemented in 1999, instead of significantly improving, in fact deteriorated its financial effectiveness. There is no doubt that the public social security system currently operating in Poland should be financed by the insurance method based on the principle of a balance between the amount of premiums collected and the sum of benefits paid.

The table below will present the current levels of contributions and the potential level of contributions guaranteeing the payment of benefits without the need for subsidies from the state budget in order to demonstrate the mismatch between current income and expenditure in the Social Insurance Trust Fund.

Table 4. Amount of social security contributions in Poland in the years 1991-2017

Year	FUS receipts from contributions [\$ mln]	FUS expenditure [\$ mln]	PREMIUM AMOUNT [%]					Level of contributions required to guarantee the effectiveness of the scheme	Difference the paid premium and the premium required
			Pension	Disability	Sickness	Accident	Total amount of the premium charged		
1991	9764.21	12110.52	-	-	-	-	45.00	55.81	-10.81
1992	10942.56	14046.19	-	-	-	-	45.00	57.75	-12.75
1993	10838.24	13603.19	-	-	-	-	45.00	56.47	-11.47
1994	11429.64	14925.19	-	-	-	-	45.00	58.76	-13.76

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1995	14525.24	16990.18	-	-	-	-	45.,00	52.67	-7.67
1996	16825.51	18993.88	-	-	-	-	45.00	5.,79	-5.79
1997	17008.04	19457.14	-	-	-	-	45.00	5.,47	-6.47
1998	18528.78	20831.21	-	-	-	-	45.00	50.59	-5.59
1999	16593.06	24105.60	19.52 (11.22 ¹)	13.00	2.45	1.62	36.59 (29.29) ¹	53.15	-16.56
2000	15093.18	19713.78	19.52 (12.22)	13.00	2.45	1.62	36.59 (29.29) ¹	47.79	-11.20
2001	17197.78	23486.16	19.52 (12.22)	13.00	2.45	1.62	36.59 (29.29) ¹	49.96	-13.37
2002	16721.90	24226.98	19.52 (12.22 ¹)	13.00	2.45	1.62	36.59 (29.59) ¹	53.01	-16.432
2003	18069.63	26281.72	19.52 (12.22 ¹)	13.00	2.45	1.93	36.90 (29.60) ¹	53.66	-16.76
2004	20260.53	29438.14	19.52 (12.22)	13.00	2.45	1.93	36.90 (29.60) ¹	53.61	-16.71
2005	24168.72	34337.51	19.52 (12.22)	13.00	2.45	1.93	36.90 (29.60) ¹	48.33	-11.43
2006	26213.69	38431.26	19.52 (12.22) ¹	13.00	2.45	1.93/ 1.80 ²	35.80 (29.50) ¹	53.04	-17.24
2007	32354.42	43869.59	19.52 (12.22) ¹	13.00 /10.00 ⁴	2.45	1.80	35.27 ³ (27.97) ¹	47.82	-12.55
2008	34432.59	56304.58	19.52 (12.22) ¹	6.00	2.45	1.80	29.77 (22.47) ¹	48.68	-18.91
2009	27770.04	48612.41	19.52 (12,22) ¹	6.00	2.45	1.80/ 1.67 ⁵	29.67 (22.37) ¹	51.93	-22.26
2010	29764.89	56651.85	19.52 (12.22) ¹	6.00	2.45	1.67	29.64 (22.34) ¹	56.41	-25.77
2011	34888.30	56619.42	19.52 (12.22) ¹	6.00	2.45	1.67	29.64 (22.34) ¹	48.10	-18.46
2012	37503.83	54172.55	19.52 (12.22) ¹	8.00	2.45	1.67/ 1.93 ⁶	31.83 (24.53) ¹	45.97	-14.14
2013	40569.79	64661.16	19.52 (12.22) ¹	8.00	2.45	1.93	31.90 (24.60) ¹	50.84	-18.94
2014	41872.20	61809.13	19.52 (16.60)	8.00	2.45	1.93	31.90 (28.98) ¹	47.08	-16.08
2015	38238.77	53504.41	19.52 (16.60) ¹	8.00	2.45	1.93/ 1.80 ⁷	31.80 (28.88) ¹	44.49	-12.69
2016	38507.01	52769.39	19.52 (16.60) ¹	8.00	2.45	1.80	31.77 (28.85) ¹	43.53	-11.76
2017	44191,20	56369.64	19,52 (16.60) ¹	8,00	2,45	1,80	31,77 (28.85) ¹	43,53	-11,76

¹⁻ In brackets, the amount of the contribution paid to ZUS by those who joined Pillar II of the pension fund (Open Pension Fund, OFE),

²⁻ The contribution amounted to 1.80 from 01.04,

³⁻ Premium rate averaged over the whole year,

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⁴ From January to June inclusive, the premium was 13.00% from 1 July 10.00%, which in effect equals to 11.50% per year,

⁵ From 01.04. the premium was 1.67%,

⁶ From 01.04. the premium was 1.93%, 7- From 01.04. the contribution was 1.80%.

The deficit value was calculated using the weighted average annual price of the U.S. dollar

Source: In-house study based on www.zus.pl and www.nbp.pl/home.aspx?f=/kursy/arch_a.html, and the Statistical Yearbook of the Republic of Poland for the years 1990-2017.

In order to achieve a balance between the discounted value of contributions collected and the discounted value of benefits paid, the amount of contributions should be increased on an ongoing basis. Neither before nor after the reform was this principle applied (except for accident insurance), despite the fact that it was one of the basic objectives of the 1999 reform of the system. Quite contrary actions were taken instead, e.g. the amounts of contributions, for example the amount of disability insurance contribution, were reduced which was justified by the reduction of so-called labor costs. In order to be able to keep continuity of benefit payment and to maintain financial effectiveness of the Social Security Administration, successive governments of the Republic of Poland completed the shortages of money in the Social Insurance Trust Fund using subsidies from the state budget.

Table 5. FUS financial forecasts for the years 2018-2022 (\$ mln) ¹

Year	Income			Expenditure			Financial effectiveness			
	Variant 1	Variant 2	Variant 3	Variant 1	Variant 2	Variant 3	Variant 1	Variant 2	Variant 3	Average
2018	44669.16	42976.33	46011.00	58962.23	59485.68	58297.02	0.7575	0.7224	0.7892	0.7563
2019	47055.10	44501.53	44501.53	62208.41	62757.72	61445.30	0.7564	0.7091	0.7958	0.7537
2020	49699.72	46080.24	52090.74	65818.51	66269.17	64975.78	0.7551	0.6953	0.8016	0.7506
2021	52386,19	47572,21	55424,66	69729,90	69192,25	68851,66	0,7512	0,6875	0,8049	0,7478
2022	55211,38	49137,48	58983,79	73796,75	73629,88	72947,93	0,7481	0,6673	0,8085	0,7413

1- The value of USD 1.00 was based on the average annual price from 2017, USD 1.00 = PLN 3.9431.

Source: In-house study based

on http://www.zus.pl/documents/10182/24106/Prognostyka_FUS_2018_2022.pdf/2cc8d322-f9f2-4bb4-98d2faef1618a9b9

www.zus.pl, and

https://www.money.pl/pieniadze/nbp/srednie/archiwum/kursy_walut_nbp,20180102.html

A possible collapse of public finances as a consequence of tolerating the existing state of affairs does not seem to mobilize the Polish government to undertake any restructuring actions which are urgently needed. The measures to be implemented should include, first of all, systemic and parametric changes in the pension, disability and sickness system through liquidation of privileges for some occupational groups, unification of the retirement age, reduction of the amount of disability and sickness benefits and, first of all, implementation of Individual Social Security Account (ISSA).

Discussion

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The functioning of the Social Insurance Administration (ZUS) as a state entity responsible for the management of social security in Poland is highly ineffective, and probably will remain such for a long time. Improving the effectiveness of this entity is associated with a change of the principles of functioning of the Polish social insurance system. To assure that the system meets the requirements of the insurance standards, subsidies from the state budget should be eliminated.

It is important to be aware that subsidizing the social security system is a short-sighted measure and in the long term context it becomes a burden to the state budget, reduces growth of GDP and limits funds for investments. Making the public social insurance system in Poland effective requires systemic changes including the implementation of an Individual Social Security Account (ISSA) in which money belonging to a contributor accumulate over the years and the insured person will benefit from it in the form of a higher pension payment. An Individual Social Security Account should concern such risks as: old age, inability to work, death of the breadwinner, illness, maternity, unemployment, misery.

Those who never received disability benefits or other allowances throughout their lifetime should be eligible for higher retirement pensions. The retirement benefit would then be calculated as the quotient of the funds gathered from the contributions related to all of the risks listed above and life expectancy coefficient, increased by the social part. This social part should guarantee to the insured person a minimum subsistence level (for example, it could be the equivalent of a social pension). The social part of the retirement benefit in the public system should be in the form of a subsidy from the state budget not exceeding the minimum benefit for each insured person. This subsidy will have to be paid by the state anyway, as pensioners who receive pensions in the amount of a few to several dozen dollars per month (and sometimes even smaller) will certainly become social welfare beneficiaries. Therefore, a solution less humiliating for this group of pensioners, and cheaper for the state due to the costs of service, would be the payment of an additional amount of money supplementary to their extremely low benefits to guarantee those people minimum subsistence, which, according to the Polish Constitution, must be financed by social welfare in cases when people do not have sufficient money for living.

Analogously, the benefits paid out of the disability pension system should be calculated similarly to retirement benefits in terms of minimum subsistence guarantees and the method of calculating the benefit amount. On the other hand, the amount of sickness benefits should be the same for each insured person, and should not depend on the salary or income received. It would also be reasonable to create, as part of the changes to the system, compulsory care insurance, from which benefits would be paid in the event of a risk of infirmity. Such a solution would shift the liability for providing assistance to the disabled from the state to the insured persons themselves, who would benefit from this type of benefits in the future (more information regarding the proposed changes in these insurances are described in Garbiec R., 2013). It is also necessary to unify the system by eliminating privileged social and professional groups (farmers, officers of uniformed services, legal professionals), which are not covered by the universal social insurance system, and the benefits paid to these groups (much higher than universal system benefits) are financed by taxpayers.

Obligatory application of the principle of balance between the amount of contributions and benefits paid is also absolutely necessary, i.e. the amount of contributions collected should be adjusted in relation to the amount of benefits paid.

Conclusions

As long as ZUS does not improve its financial effectiveness, the looming bankruptcy will still threaten its viability because of a steady rise in the number of people entitled to receive retirement benefits. Several percent of the state's income allocated each year for subsidies to the Social Insurance Trust Fund will inevitably increase to a few dozen percent in subsequent years due to unfavorable demographic changes. Such a situation will certainly

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lead to the collapse of public finances and, as a result, to radical and unacceptable drastic cuts in insurance benefits.

In summary, in order to improve the financial effectiveness of ZUS, the following changes must be implemented immediately:

- a change of the scope of protected social risks in the Social Insurance Administration (ZUS) by including the unemployment risk in the system;
- a change of the scope of protected social risks in the Social Insurance Administration (ZUS) by including the risk of infirmity, i.e. "limitation of a person's physical functioning or mobility" (by provision of a care insurance split from disability insurance) ;
- introduction of a uniform system of social insurance without privileges for specific social and professional groups such as miners, farmers, officers of uniformed services;
- creation of an Individual Social Security Account, operating according to the "combined vessels" principle, in which unused contributions for particular types of disability, sickness and unemployment benefits would increase the pension capital (See Garbiec, 2017).

Corrective actions are not only a long-run challenge, but actually an immediate necessity now. Whether or not the social security system should continue in the present form is an issue that must be urgently taken into consideration, otherwise it is a matter of time that Poland will also witness situations currently faced by people in Argentina, Estonia or Greece.

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