

## RESTRUCTURING OF THE DISABILITY PENSION SCHEME FOLLOWING A CONCEPT OF AN INTEGRATED PUBLIC SO- CIAL INSURANCE SYSTEM IN POLAND

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**Abstract:** The disability pension system in Poland has operated largely unchanged since the 1970s. A compelling need to reform the system and adjust it to the challenges of the 21<sup>st</sup> century is an axiom in the Polish social policy. Unfortunately, restructuring of this system has never been, and is not a top priority for the Polish government. Ignoring this problem is a headwind against economic growth in Poland as the state is overburdened with significant social taxes. A need for the state to provide subsidies to cover current expenditures of the Social Insurance Trust Fund (FUS) is a permanent concern of the national economy. This paper highlights legislative errors and omissions in the Polish social insurance system, and the share of the state's budget devoted to financing of this system and benefit payments over the years 1991-2018. In the main part of the article, financial aspects of the operation of the pension system in Poland were presented. At the end of the article, a preliminary concept of a reform of the existing disability pension system was outlined, whose aim is in particular to improve its financial effectiveness and introduce uniform rules for the payment of pension benefits in Poland.

**Keywords:** financial effectiveness, public social insurance system, disability pension system, disability benefits, financial effectiveness indicators

### 1. INTRODUCTION

There is almost no country in the world where no social security systems exist, and these systems are part of the state citizen-oriented social policy. The structure of social security systems is diversified and depends on the social policy model applied by the state. The Polish social security system was reorganized systemically and parametrically in 1999, however, the reform was introduced incompletely and chaotically which caused a growing financial deficit of the system. During its implementation, a number of mistakes and omissions were made which, instead of improving the financial efficiency of the system (which was an expected target of the reform), have caused increasing deterioration of the scheme. The very construction of the Polish system protecting against social risks such as old age, death of the breadwinner, inability to work, accidents at work and occupational diseases is now an anachronistic structure inadequately matched to the needs and interests of people insured in this system. With no

immediate systemic and parametric actions on the horizon, a share of the government budgetary resources allocated to cover this element of social security will keep on increasing.

This article is an attempt to diagnose and indicate some directions of changes to the disability pension subsystem, which is an integral part of the Polish social insurance system. A method of analysis of quantitative changes in the Polish social insurance system and indices of financial effectiveness of the system were used by the author of the study.

## 2. METHODOLOGY OF RESEARCH

The basic assumption of the study was a thesis that there is a possibility of improving the financial efficiency of the Social Security Administration through the reconstruction of the social insurance system. Such reconstruction should be based on systemic and parametric changes in social insurance supported by possible economic and social changes (so-called non-systemic) in the national economy. In order to diagnose the existing state of affairs, a measure of the financial effectiveness of the system was used as a research tool.

Using the above mentioned measure of financial effectiveness, the study adopted the rule that expenditures are the sum of financial resources accumulated in the system, and the effects are the sum of all benefits paid to eligible persons according to the criteria defined by the system's creator. The financial effectiveness of the social insurance system (as well as of the examined entity, i.e. the Social Security Administration) should be based on an actuarial account, which means it requires the application of the principle that the incurred outlays (premiums) balance, or exceed the incurred effects-paid benefits.

To achieve this equity it is necessary to balance the system incomings and expenditure, i.e. discounted value of all contributions paid into the fund each month throughout the insurance lifecycle (per year) increased by a reserve, if any (or system initial debt) must equal to the discounted value of all benefits currently paid. It can be expressed by the following equation:

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

where:

$R_0$  – reserves or initial debt upon system implementation,

$C_{ij}$  – value of the contribution paid in by a payer  $i$  in the period  $j$ ,

$b_{kl}$  – value of the benefit paid to the person  $k$  in the period  $l$ ,

$r$  – rate of return (depending on the system, a rate of return of the investment or a rate of increase of the payroll budget),

$m$  – number of contribution payers,

$n$  – number of contribution payment periods ,

$p$  – number of beneficiaries receiving benefits,

$s$  – number of benefit collection periods („Safety Thanks to Diversity”, 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 eventuality, however, the actual statement of these variables is presented by so-called financial

effectiveness of the social insurance system. The formula for the financial efficiency 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 efficiency of the social security system,

$S_k$  – social security contributions,

$S_w$  – benefits paid out of the scheme,

$K$  – administrative costs (Garbiec, 2013).

A given social security system may be considered financially effective if it reaches the value of a measure equal to unity. Any results below this value will indicate a need for systemic or parametric changes. Systemic changes mean these activities of legislative and executive bodies that change the scope of protection of social risks, or re-organise them. Parametric changes, on the other hand, consist in changes of the rules of collecting contributions or paying social benefits due by virtue of the execution of a g

### 3. RESULTS

The main reason for the implementation of the system reform in 1999 was growing financial deficit of the Social Insurance Trust Fund (FUS) and the likelihood of an increase in the number of potential beneficiaries (population ageing).

The major drawbacks of the commenced but unfinished social security system reform, and of the changes that followed its launch (in the years 1999-2018), which significantly influenced the financial stability of the Social Insurance Trust Fund (FUS), were:

- no reorganization of the disability pension system,
- no reorganization of the sickness scheme,
- no reorganization of the farmer's social security scheme,
- a reverse reform of the system because of restoring pension privileges to uniformed services in 2003,
- a reverse reform of the system because of restoring pension benefits to miners in 2005,
- overestimation (more than 3.5 times) of the number of people willing to join the second pension pillar caused by the spread of disinformation and negative marketing activities of both the government and public pension funds, as a consequence of which the FUS deficit drastically increased,
- huge participation rate of the state budget to cover the annual shortfall in the accounts of the Social Insurance Administration.

20 years after the implementation of the reform, the financial condition of the Social Insurance Trust Fund not only was not improved, but it has deteriorated remarkably, which is shown below (Garbiec, 2019).

Expenditure for benefits in the Polish social security system are covered in a hybrid way. The system assumes that the contributions from the employers and the insured persons (employees) should go toward funding of the benefits. Unfortunately, the solutions that have been adopted cause that the government must use the resources gathered from taxes to capture the deficit of funds necessary to pay ongoing cost of social benefits.

Table 1

Table. Amount of social security contributions in Poland in the years 1991-2018

Year	FUS receipts from contributions [mln]	FUS expenditure [mln]	PREMIUM AMOUNT [%]					Total amount of the premium charged	Level of contributions required to guarantee the effectiveness of the scheme	Difference between the premium paid and the premium required
			Pension	Disability	Sickness	Accident				
1991	9276.8	11505.6	-	-	-	-	45.00	55.81	-10.81	
1992	14593.2	18732.3	-	-	-	-	45.00	57.75	-12.75	
1993	19666.3	24683.0	-	-	-	-	45.00	56.47	-11.47	
1994	25975.0	33919.0	-	-	-	-	45.00	58.76	-13.76	
1995	35215.1	41191,1	-	-	-	-	45,00	52.67	-7.67	
1996	45370.0	51217.6	-	-	-	-	45.00	5,79	-5.79	
1997	55800.4	63835.0	-	-	-	-	45.00	5.47	-6.47	
1998	64734.4	72778.6	-	-	-	-	45.00	50.59	-5.59	
1999	65833.9	95639.4	19.52 (11.22 <sup>1</sup> )	13.00	2.4 5	1.62	36.59 (29.29) <sup>1</sup>	53.15	-16.56	
2000	65601.5	85684.0	19.52 (12.22)	13.00	2.4 5	1.62	36.59 (29.29) <sup>1</sup>	47.79	-11.20	
2001	70406.7	96150.3	19.52 (12.22)	13.00	2.4 5	1.62	36.59 (29.29) <sup>1</sup>	49.96	-13.37	
2002	68217.1	98834.2	19.52 (12.22 <sup>1</sup> )	13.00	2.4 5	1.62	36.59 (29.59) <sup>1</sup>	53.01	-16.432	
2003	70271.8	102207.4	19.52 (12.22 <sup>1</sup> )	13.00	2.4 5	1.93	36.90 (29.60) <sup>1</sup>	53.66	-16.76	
2004	74032.7	107567.7	19.52 (12.22)	13.00	2.4 5	1.93	36.90 (29.60) <sup>1</sup>	53.61	-16.71	
2005	78181.9	111075.5	19.52 (12.22)	13.00	2.4 5	1.93	36.90 (29.60) <sup>1</sup>	48.33	-11.43	
2006	81328.5	1192330	19.52 (12.22) <sup>1</sup>	13.00	2.4 5	1.93/ 1.80 <sup>2</sup>	35.80 (29.50) <sup>1</sup>	53.04	-17.24	
2007	89515.8	121374.8	19.52 (12.22) <sup>1</sup>	13.00 /10.00 <sup>4</sup>	2.4 5	1.80	35.27 <sup>3</sup> (27.97) <sup>1</sup>	47.82	-12.55	
2008	82955.0	135649.8	19.52 (12.22) <sup>1</sup>	6.00	2.4 5	1.80	29.77 (22.47) <sup>1</sup>	48.68	-18.91	
2009	86537.7	151486.5	19.52 (12,22) <sup>1</sup>	6.00	2.4 5	1.80/ 1.67 <sup>5</sup>	29.67 (22.37) <sup>1</sup>	51.93	-22.26	
2010	89378.7	160842.3	19.52 (12.22) <sup>1</sup>	6.00	2.4 5	1.67	29.64 (22.34) <sup>1</sup>	56.41	-25.77	
2011	102549.0	166667.3	19.52 (12.22) <sup>1</sup>	6.00	2.4 5	1.67	29.64 (22.34) <sup>1</sup>	48.10	08- 18.46	
2012	121908.5	174837.4	19.52 (12.22) <sup>1</sup>	8.00	2.4 5	1.67/ 1.93 <sup>6</sup>	31.83 (24.53) <sup>1</sup>	45.97	-14.14	

2013	122942.0	183 785.8	19.52 (12.22) <sup>1</sup>	8.00	2.4 5	1.93	31.90 (24.60) <sup>1</sup>	50.84	-18.94
2014	131 102.7	191 710.4	19.52 (16.60)	8.00	2.4 5	1.93	31.90 (28.98) <sup>1</sup>	47.08	-16.08
2015	143 298.4	199 498.0	19.52 (16.60) <sup>1</sup>	8.00	2.4 5	1.93/ 1.80 7	31.80 (28.88) <sup>1</sup>	44.49	-12.69
2016	152 160.3	205 430.2	19.52 (16.60) <sup>1</sup>	8.00	2.4 5	1.80	31.77 (28.85) <sup>1</sup>	42,89	-11.12
2017	16694.1	212947.6	19,52 (16.60) <sup>1</sup>	8,00	2,4 5	1,80	31,77 (28.85) <sup>1</sup>	40,52	-8.75 <sup>8</sup>
2018	180414.3	22988.,2	19,52 (16.60) <sup>1</sup>	8,00	2,4 5	1,80	31,77 (28.85) <sup>1</sup>	40,48	-8.71 <sup>8</sup>
<p>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),</p> <p>2- The contribution amounted to 1.80 from 01.04,</p> <p>3- Premium rate averaged over the whole year,</p> <p>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,</p> <p>5- From 01.04. the premium was 1.67%,</p> <p>6- From 01.04. the premium was 1.93%,</p> <p>7- From 01.04. the contribution was 1.80%.</p>									

Source: In-house study based on [www. zus.pl](http://www.zus.pl). and the Statistical Yearbook of the Republic of Poland for the years 1990-2019.

One of the four core components of the social security system in Poland is the disability pension scheme (subsystem). All the solutions applied in the Polish social security system originate from the system reform (implemented in 1999) and are designed as a defined-contribution system, whereas the solutions on which the disability pension subsystem is based upon originate from 1975, when the defined-benefit system was in operation in Poland. Thus, the financial efficiency indicators of the disability pension system are not consistent. To ensure the improvement of these indicators, a method of radical tightening of eligibility criteria in terms of disability benefit entitlements was applied (i.e. a decrease in the actual number of system beneficiaries) at the expense of credible evaluation of the insured person's incapacity to work.

Table 2

Financial effectiveness of the disability insurance in Poland [mln PLN]

Year	Revenue from contributions	Benefit spending	Financial effectiveness
2000	29375.6	33453.9	0.8780
2001	28570.7	37149.2	0.7690
2002	28859.2	37319.1	0.7733
2003	28272.8	37970.4	0.7446
2004	30039.7	37416.5	0.8028
2005	32161.4	37265.1	0.8630
2006	31928.7	37230.6	0.8575
2007	32870,7	34114.6	0.9635
2008	22043.8	35992.3	0.6125
3009	22402.6	37779.5	0.5930
2010	23 060.9	39 545.7	0.5832

2011	24 268.2	40 232.5	0.6032
2012	32 387.3	42 085.2	0.7696
2013	35 608.5	43 905.8	0.8111
2014	36 113.6	44 831.9	0.8056
2015	38 085.4	45 556.5	0.8360
2016	40 491.9	45 486.7	0,8902
2017	44 027.5	45 623.5	0.9651
2018	48 053.9	45 715.0	1.0512

Source: In-house study based on [www. zus.pl](http://www.zus.pl).

On the basis of the currently applied solutions and macroeconomic data, projections of the receipts and expenditures within the disability pension system in Poland for a few years ahead were developed, which are presented in the table below.

Table 3

Projections of the disability fund spending (zus.pl)

Year	Revenue [mln PLN]	Expenditure [mln PLN]	Financial effective- ness
Middle-road scenario			
2019	49,575	42,274	1.0487
2020	52 434	48 668	1.0774
2021	55 345	50 330	1.0997
2022	58 331	52 320	1.1149
2023	61 466	54 589	1.1260
Pessimistic scenario			
2019	47,648	47,723	0.9985
2020	49 468	49 304	1.0034
2021	51 537	51 139	1.0078
2022	53 708	53 282	1.0080
2023	55 913	55 683	1.0042
Optimistic scenario			
2019	50,931	46,883	1.0864
2020	54 530	48 051	1.1349
2021	57 826	49 512	1.1680
2022	61 186	51 312	1.1925
2023	61 186	53 396	1.1459

Source: In-house study based on [www. zus.pl](http://www.zus.pl).

Forecasts for the coming years are promising, but the calculation methods used were based on stringent eligibility criteria and a rule of denying disability benefit claims to persons incapable of work, the reasons of which is a deficit of the disability pension system, and not the actual medical conditions of insured persons. Further operation of the system designed in this way (a defined-benefit system incorporated in the defined-contribution system) together with the adopted eligibility evaluation standards raise doubts as to the legitimacy of the system in its current form.

#### 4. DISCUSSION

Social security is a tax and transfer program present in almost every country. It accounts for a large fraction of countries' gross domestic product and it accounts for an even bigger fraction of their tax proceeds. (Alonso-Ortiz,2014). Thus, an analysis of the social

security system (and its disability pension subsystem) turns into an analysis of the efficiency of social policy and tax system of a given country. Improvement of financial sustainability of the disability pension system significantly influences the operation of the tax system and the elevation of macroeconomic indicators of a each country.

Scientific research devoted to disability pension systems carried out in recent years evaluated two aspects: quantitative and qualitative changes in the system. Quantitative changes focused on the analysis of number of people incapable of work, or of spending on disability benefits, and a correlation between the number of people claiming benefits and the amount of benefits. Qualitative research was focused on systematizing the system in terms of defining and selecting an eligibility criterion in assessing incapacity for work or disability of insured persons. As Hugo Benitez-Silva, Richard Disney and Sergi Jimenez-Martin noted: "An important policy issue in recent years concerns the number of people claiming disability benefits for reasons of incapacity for work. We distinguish between 'work disability', which may have its roots in economic and social circumstances, and 'health disability' which arises from clear diagnosed medical conditions. Although there is a link between work and health disability, economic conditions, and in particular the 'business cycle' and variations in the risk of unemployment over time and across localities, may play an important part in explaining both the stock of disability benefit claimants and inflows to and outflow from that stock. Other examined factors, including the trend in the relative generosity of disability benefits relative to other social insurance benefits, and underlying demographic and morbidity trends, are also relevant. In particular, several high profile studies, such as Autor and Duggan (2003, 2006) and Burkhauser and Daly (2001) in the United States, and OECD (2006, 2007) more generally, have pointed to trends in the relative generosity of disability benefit programmes as an important explanatory variable in explaining the trend in claimant numbers (Benitez-Silva et al., 2010)."

Qualitative research on pension systems shows interdependence between inability to work and unemployment, or the attractiveness of disability pension schemes/systems in terms of the benefit rates. At the same time, most countries have tightened access to benefits in the last decade while improving employment integration. This is a promising development because analysis reveals that a more generous disability policy is associated with higher numbers of beneficiaries while more comprehensive employment and rehabilitation programs are associated with lower reciprocity rates. The analysis of this issue has shown that some elements of disability policies are associated with a change in disability rates. However, it is difficult to fully account for disability trends since the decision to apply for disability benefit is not only a function of disability policy but it is also related to alternative programs such as unemployment, early retirement and social assistance (Bound and Burkhauser, 1999) (Pathways onto (and off) Disability Benefits, 2009).

Qualitative research regarding disability pension systems in recent years has also focused on finding proper balance or relationship between the degree of disability / inability to work and entitlement to disability benefits. The research shows that three models of direct work disability assessments can be observed:

- (1) structured assessment, which measures the functional demands of jobs across the national economy and compares these to claimants' functional capacities;

(2) demonstrated assessment, which looks at claimants' actual experiences in the labour market and infers a lack of work capacity from the failure of a concerned rehabilitation attempt; and (3) expert assessment, based on the judgement of skilled professionals (Baumberg Geiger et al., 2017).

On the other hand, parametric analysis of disability pension systems in EU member states showed, inter alia, that there are two major methods of calculation of disability benefit amounts.

- Some countries apply a risk-based logic (type A legislation). There you are entitled to the same pension regardless of your periods of insurance, but you must be insured when the invalidity occurs. This calculation method applies only to certain schemes i.e. schemes in the Czech Republic, Estonia, Ireland, Greece, Croatia, Latvia, Hungary, Slovakia, Finland, Sweden and the United Kingdom.
- All other countries (i.e. Poland) apply a pro-rata method (type B legislation). This means that the invalidity pension is calculated on the length of your insurance period in each country: the longer you were insured before becoming an invalid, the higher your pension will be. Even if you weren't insured when becoming an invalid, you will still be entitled to a pension (Employment, <https://ec.europa.eu/social/main>, 2019)

## 5. CONCLUSIONS

In order to restructure the social security plan into an integrated system, it must meet mandatory requirements of an insurance standard, i.e. it must be financially effective. Further subsidizing of the social security system becomes a burden on the state budget, reduces GDP growth and limits funds for investments. Thus, the present system needs adjustments and improvements, including:

- changing the scope of protected social risks in ZUS through the inclusion of the risk of infirmity into the system (by the implementation of attendance insurance spun off from disability insurance) - It would also be reasonable to create compulsory attendance insurance within the framework of the system changes, the income of which would be used for the payment of benefits in the event of sickness. This would be of an insurance-based solution and would shift the obligation to provide assistance to incapacitated persons from the State to insured persons who would receive such benefits in the future;
- changing the scope of protected social risks in ZUS through the inclusion of the unemployment risk into this system;
- 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;
- introduction of a uniform system of social insurance without privileges for specific social and professional groups, for example miners, uniformed services, farmers or lawyers;
- changing the rules of the calculation of retirement pension benefit amounts,
- the unification of disability benefit levels (Garbiec, 2019).

The harmonization of disability benefit levels should be based on a rule of granting benefits at a same level to all insured persons. The only difference should be the degree of incapacity to work. It would be reasonable to introduce a few degrees of medical



disability (at least 5) defined as percentage, to which the level of the payment of disability benefit should be correlated. The lowest level of benefit (1 out of 5) should be at the level of today's minimum partial disability benefit. The highest level of pension should not exceed 75% of the lowest salary. Such a uniform level of benefits for all beneficiaries should provide the insured persons with sufficient money for living and, on the other hand, it would eliminate all attempts of abuse. All benefits in kind, e.g. medicines, orthopaedic appliances for disability benefit recipients should be free of charge or paid in form of a very low lump sum or a symbolic lump sum. Alternatively, rules applicable within the retirement pension system, where level of benefits is calculated using the method with a defined contribution rate, may be adopted.

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