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Consistently Compromising Reform of the Polish  
Pension System  
- from 1999 to 2004 -

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# I Compromising Character of the Reform Program of the Polish Pension System

Bankruptcy of the Social Pension Fund was apparent for the Polish citizens in 1990's. There existed social agreement on avoidance of bankruptcy of the Social Pension Fund in 1998 and also in 2004. In spite of these circumstances, however, every pension reform brings a social conflict among many social groups. Therefore the Polish government proposed its reform program for the pension system taking into regards the following viewpoints.

- 1) enterprises VS workers
- 2) old age workers VS middle age and young age workers
- 3) high income group VS low income group
- 4) pure industrial workers VS workers who engaged in agriculture in the past
- 5) female workers VS male workers

## 1) enterprises VS workers

A principle, by which enterprises lose nothing and workers lose nothing, was introduced. Any change of wage burden for enterprises did not occurred in 1999 and any change of net wage level of workers did not occurred. Therefore the level of personal income tax and profit tax had not changed.

## 2) old age workers VS middle age and young age workers

In January of 1999 the general pension age for female workers was raised from 55 years old to 60 years old and for male workers it was raised from 60 years old to 65 years old. This was a big shock for old age workers who dreamed their pension life within 5 years. Therefore the following measures were introduced;

a-1) A female worker, who worked more than 30 years including non-working employment period of sickness, childbirth and childcare, can obtain the right to enter her pension life after 55 years old. (Art.29)

a-2) A female worker, who worked more than 20 years including non-working employment period of sickness, childbirth and childcare, can obtain the right to enter her pension life after 55 years old, if she becomes a partially disable worker from a reason of labor sickness or labor accident or if she becomes a complete disable worker from any reason..(Art.29 and 31)

a-3) A male worker, who worked more than 25 years including non-working employment

period of sickness and childcare, can obtain the right to enter his pension life after 60 years old, if he becomes a partially disable worker from a reason of labor sickness or labor accident or if he becomes a complete disable worker from any reason..(Art.29 and 31)

As shown in the table 1, the majority of the 55 years old female workers, utilizing the measure of a-1, chose their pension life at 55 years old.

b) The workers in central administration offices of the state (for example ministries) and in local administration offices (for example town office) and teachers in higher education can enter their pension life after 55 years old in case of female and 60 years in case of male.

Many public servants entered their early pension life utilizing this measure.

c) Up to 2004 workers who worked in dangerous condition, for example policeman, soldier and fire-man, could enter their early pension life at the age of 40-55 in case of female and at the age of 45-60 in case of male. Pension age was determined by the government depending on their kind of profession.

d) Even after the reform in 2004 workers in coal mine, railway workers and teachers of any schools can enter their early pension life at the age of 55 in case of female and at the age of 60 in case of male.

e) Until 2004 an approval of disable worker (complete or partial) was done on basis of the judgment by a medical doctor. The amount of partial disable pension is 75% of old age pension and the amount of complete disable pension is same as that of old age pension. The sickness (sometimes disguised) of hernia of back-born was used as a reason of partial disable condition.

As is shown in table 3, many female and male workers (including jobless persons) at the age of 50-54 entered disable pension life in 1998. 1999 and 2000.

### 3) high income group VS low income group

The lowest pension was introduced into the pension system. In January of 1999 that of the old-age pension was 415 zloty and that of the complete disable pension was also 415 zloty, on the other hand that of the partial disable pension was 319.23 zloty. In 1998 the national monthly average wage was 1439 zloty. This lowest pension was usually applied for disable pensioner at middle age and young age.

Income which exceeds the level of 250% of national average wage is not reflected into the future level of pension. By these measures the difference of pension allowance between the high income group and the low income group.

#### 4) pure industrial workers VS workers who engaged in agriculture in the past

In Poland the agricultural pension had been introduced in 1977 and many farmer, resigning from management of own farm, begun to work at industrial factory. Their working period, including non-working period from sickness, childbirth and childcare, is always shorter than that of pure industrial workers. So the Polish pension system admits their working period in their own farm before 1977 (in case of head of farm) or before 1983 (in case of non-head of farm) as a working period in pension allowance calculation.

In spite of this warm measure, if a farmer resigned from agriculture in 1990's, their working period is shorter than that of pure industrial workers, since the period between 1977 and the year when she/he begun to work at factory is not concluded into the working period in pension allowance calculation. In Polish pension system one year of this period brings 1 % of the lowest pension to her/his amount of old-age pension.

#### 5) female workers VS male workers

Even before 1998 female was treated favorably comparing male. In the new pension system also female is treated favorably, for example 5 years' early pension life is given to female. So there is no change in this viewpoint after 1999.

Figure 1 The Polish pension system before 1998.

See appendix

Figure 2 The Polish pension system after 1999 up to now

See appendix

The quite detail coefficients in figure 2 can be obtained by solving the following mathematical problem.

Let's assume that the net wage (including income tax) of an employee is 100 zloty.

a) The burden for old-age pension (24 zloty) is covered **equally** by the enterprise and the employee.

y: net wage of the employee after the 1999's pension reform.

$$a * y = 24 / 2 = 12 \dots \dots \dots (1)$$

b) The burden for disable pension (16 zloty) is covered **equally** by the enterprise and the employee.

$$b * y = 16 / 2 = 8 \dots \dots \dots (2)$$

c) The burden for allowance for sickness, childbirth and child care (3 zloty) is covered only by the employee.

$$c * y = 3 \dots \dots \dots (3)$$

c) The burden for allowance for labor accident is covered only by the enterprise, raising it from 2 zloty to 2.5 zloty which reflects frequency of labor accident.

$$d * y = 2.5 \dots \dots \dots (4)$$

d) The net income (but including income tax) of any employee must **not be changed**.

$$(1 - a - b - c) * y = 100 \dots \dots \dots (5)$$

From the equations (1), (2), (3) and (5) we can obtain the solution of y.

$$y = 123 \dots \dots \dots (6)$$

$$a = 9.756\%$$

$$b = 6.504\%$$

$$c = 2.439\%$$

Let the coefficients a, b and c be 3-digit number, increasing c by 0.01 point.

$$A = 9.76\%$$

$$B = 6.50\%$$

$$C = 2.45\%$$

Using these A, B and C, let us calculate y once more by the following way.

$$(1 - A - B - C) * Y = 100 \dots \dots \dots (7)$$

Then we can obtain the new wage level of y, i.e. Y.

$$Y = 123.0164$$

Therefore the government must increase wage level by 23.0164%.

From equations (5) and (7)

$$d = 0.020322$$

So 3-digit number of d must be as follows:

$$D = 2.03\%$$

So the burden of an employee is 9.76% + 6.50% + 2.45% = 18.71% of her/his net wage and the burden of the enterprise from employing her/him is

9.76% + 6.50% + 2.03% = 18.29% of her/his net wage. Now we can obtain all coefficients

in figure 2 except two dividing coefficients of reserving money for pension among private open fund (7.3%) and the Social Pension Fund (12.22%).

## II Collapse of pension scheme after 1998's reform

The subsidy from the State Budget for the Social Pension Fund has been always increasing, of which tendency was not expected by the government in 1998.

Table 1 Tendency of subsidy for the Social Pension Fund after the first reform

| year                            | 1998       | 1999       | 2000        | 2001        | 2002        | 2003  |
|---------------------------------|------------|------------|-------------|-------------|-------------|-------|
| Subsidy (million zloty)         | 8792       | 9459       | 15366       | 21157       | 26987       | 28265 |
| portion to the whole budget (%) | <b>6.3</b> | <b>7.2</b> | <b>10.4</b> | <b>12.2</b> | <b>14.8</b> | 14.9  |
| portion to the GDP (%)          | 1.58       | 1.57       | 2.15        | 2.82        | 3.50        | 3.47  |

Bankruptcy of the Social Pension Fund became apparent in the end of 2002 and the future bankruptcy of the State Budget in future was expected inevitable. Why such tragedy had occurred within 4 years after the 1998's reform? To answer this question we must analyze the total number of pensioners.

Table 2 Number of old-age pensioners and disable pensioner at the age of 55-59 (at the end of year; in thousand)

| year                             | 1997         | 1998         | 1999         | 2000       | 2001       | 2002       | 2003       |
|----------------------------------|--------------|--------------|--------------|------------|------------|------------|------------|
| <b>female</b> old-age pensioners | <b>367.6</b> | <b>355.2</b> | <b>344.4</b> | <b>329</b> | <b>352</b> | <b>399</b> | <b>471</b> |
| <b>male</b> old-age pensioners   | <b>146.5</b> | <b>124.6</b> | <b>94.9</b>  | <b>68</b>  | <b>52</b>  | <b>51</b>  | <b>53</b>  |
| female disable pensioners        | 153.7        | 152.8        | 152.0        | 150        | 157        | 163        | 163        |
| male disable pensioners          | 271.4        | 265.3        | 261.8        | 251        | 253        | 261        | 271        |

It is quite surprising that in spite of raising up of general pension age for female from 55 years old to 60 years old the total number of female old-age pensioners at the age from 55 to 59 did not decreased largely but has been increasing from the year 2000. On the other hand the total number of male old-age pensioners at these ages had drastically decreased from the 1998's reform. For male workers the age of beginning early pension life was raised up to 60 years old from 55 years old and this measure in 1998's reform brought this drastic decrease of total number of male pensioners at the age of 55-59.

Table 3 Number of old-age pensioners and disable pensioner at the age of 60-64 (at the end of year; in thousand)

| year                           | 1997  | 1998         | 1999         | 2000       | 2001       | 2002       | 2003       |
|--------------------------------|-------|--------------|--------------|------------|------------|------------|------------|
| female old-age pensioners      | 467.9 | 469.4        | 480.4        | 480        | 472        | 462        | 461        |
| <b>male</b> old-age pensioners | 358.4 | <b>363.2</b> | <b>350.5</b> | <b>333</b> | <b>313</b> | <b>289</b> | <b>275</b> |
| female disable pensioners      | 103.7 | 105.5        | 104.6        | 102        | 99         | 94         | 81         |
| male disable pensioners        | 205.7 | 209.6        | 213.0        | 211        | 206        | 195        | 179        |

In case of female worker the age of beginning pension life was 60 years old even before the pension reform. Therefore the total number of female pensioners does not change so much. Yet the general age of beginning pension life for male worker was raised up to 65 years old from 60 years old, the total number of male pensioners did not decreased drastically. This fact suggests that many male workers had entered their pension life utilizing the right of early pension life from the reason of dangerous work or special professions, for example, such as public servant, teacher, coal miner and railway worker. Surely more than two third of male workers utilized this right to early pension life. This tendency also expected by the government.

Table 4 Number of disable pensioner at the age of 50-54 and 40-49 (at the end of year; in thousand)

| year                                   | 1997  | 1998         | 1999         | 2000       | 2001 | 2002 | 2003 |
|--|-------|--------------|--------------|------------|------|------|------|
| <b>50-54 female</b> disable pensioners | 226.9 | <b>248.2</b> | <b>264.0</b> | <b>272</b> | 255  | 236  | 216  |
| <b>50-54 male</b> disable pensioners   | 238.5 | <b>260.8</b> | <b>278.1</b> | <b>289</b> | 277  | 263  | 251  |
| 40-49 female disable pensioners        | 353.3 | 338.0        | 320.0        | 284        | 245  | 212  | 187  |
| 40-49 male disable pensioners          | 378.5 | 373.9        | 362.5        | 332        | 296  | 264  | 238  |

In case of female and also male the total number of disable pensioners at ages from 50 to 54 years old had increased from 1998 to 2000. Since almost all workers at ages from 50 to 54 can not utilize the right to early pension life, they selected disable pension life though the allowance of partial disable pension is quite low.

Table 2, table3 and table 4 explain very well the cause of crisis in the Polish pension system from the viewpoint of expenditure of the Social Pension Fund (ZUS).

Now let us consider the cause of crisis in the Polish pension system from the viewpoint of revenue to the Social Pension Fund (ZUS).

Table 5 Unemployment rate of young generation (in the fourth quarter of year; in %)

| year            | 1998        | 1999        | 2000        | 2001        | 2002        | 2003 |
|-----------------|-------------|-------------|-------------|-------------|-------------|------|
| 20-24 years old | <b>21.0</b> | <b>29.7</b> | <b>32.4</b> | <b>40.0</b> | <b>42.5</b> | 40.2 |
| 25-29 years old | <b>11.1</b> | <b>16.9</b> | <b>16.9</b> | <b>20.1</b> | <b>22.6</b> | 21.4 |
| 30-34 years old | 10.1        | 14.3        | 15.3        | 15.6        | 17.1        | 17.1 |

As is shown in table 5, the number of jobless persons in young generation increased drastically from 1998 to 2002. This tendency brought decrease of delivery to the Social Pension Fund, since as shown in figure 2 every worker at the young generation (born after January of 1969) must deliver 12.22% of their wage to the Social Pension

Fund (ZUS).

Why such tragic situation had appeared? The main reason of this tendency is restructure of industry under the market mechanism and the total number of employment on the basis of an employment contract has been astonishingly decreasing after 1998 by 10%.

Table 6 Number of employees hired on the basis of an employment contract after the pension reform (in the fourth quarter of year; in thousand)

| 1998     | 1999   | 2000   | 2001   | 2002   | 2003   |
|----------|--------|--------|--------|--------|--------|
| .10186.7 | 9946.9 | 9504.5 | 9165.1 | 9366.8 | 9236.1 |

Reader may consider that even when the total number of employment decreases, if nominal wage of worker increase, the total delivery to the Social Pension Fund increases and any crisis of pension system does not occur. So now it is necessary the relation between revenue and expenditure under the condition of increasing nominal wage and increasing price index.

Table 7 index of average gross nominal wages and salaries (1992=100)

| 1998  | 1999  | 2000  | 2001  | 2002  | 2003  |
|-------|-------|-------|-------|-------|-------|
| 425.7 | 478.9 | 532.1 | 574.7 | 589.6 | 614.4 |

The amount of allowance of old-age pension depends on the generation, i.e. the old generation (born before December of 1948), the middle age generation (born after January of 1949 to December of 1968) and the young generation (born after January of 1969). Almost all old-age pension, however was received by the old generation in the period from 1999 to 2003. So let us analyze the calculation of pension allowance for the old generation.

The most important factor of pension calculation is so-called “basic amount” (kwota bazowa). Basic amount is calculated as national average monthly wage which is deducted by the burden for social insurance, i.e. 18.71% of wage. The basic amount in January of 1999 was settled at 1220.89 zloty (article 177 of the Pension Reform Law).

Mathematically we can present the following equation, where KW means basic amount.

$$KW = (\text{national average monthly nominal wage}) * 0.8129 \dots \dots \dots (1)$$

The monthly pension for the old generation (POG) is calculated as follows;

$$\begin{aligned}
 POG &= KW * 0.24 + (\text{working employment years}) * 0.013 * (KW * \text{wage index}) \\
 &\quad + (\text{non-working employment years}) * 0.007 * (KW * \text{wage index}) \\
 &= [ 0.24 + (\text{working employment years}) * 0.013 * (\text{wage index}) + (\text{non-working} \\
 &\text{employment years}) * 0.007 * (\text{wage index}) ] * KW \dots \dots \dots (2)
 \end{aligned}$$

where;

KW means so-called “basic amount”

“working employment years” means the period in which the worker earned wage including vacation. When the worker worked 366 months, then working employment years is 30.5.

“non-working years” means the period in which the worker received allowance for sickness, childbirth and childcare.

“wage index” means the average relation of her/his wage to the national average wage in the best continuous 10 years from the viewpoint of amount of her/his wage. For usual industrial worker the best 10 years’ period is period beginning from 40 years old and they receive from 1.3 to 1.5 as the wage index.

Therefore “basic amount KW” determines fundamentally the amount of pension.

Taking into account inflation the “basic amount KW” is increased as follows;

In 1999 and in 2000 KW is increase by the following coefficient.

$$(\text{nominal wage increase rate} - \text{inflation rate}) * 0.15 + \text{inflation rate} \dots \dots \dots (3)$$

In 2001,2002 and in 2003 KW is increase by the following coefficient.

$$(\text{nominal wage increase rate} - \text{inflation rate}) * 0.20 + \text{inflation rate} \dots \dots \dots (4)$$

In other words KW is increased little higher than inflation rate (price index of consumption goods), but quite lower than increase rate of nominal wage.

Therefore theoretically the revenue to the Social Pension Fund increases faster than expenditure. Moreover the general age of beginning pension life is raised up by 5 years. The government did not expect the collapse of the Social Pension Fund in 1998.

After the first reform of the pension system the amount of old-age pension for the middle age worker who selected the second pillar and for the young generation (POM&Y) from the Social Pension Fund is calculated will be calculated in future as follows.

They must deliver monthly 12.22% of their wage to the Social Pension Fund and this monthly delivery will be re-valued every year by the following coefficient.

(re-value coefficient) =

$$(\text{nominal wage increase rate} - \text{inflation rate}) * 0.75 + \text{inflation rate} \dots \dots \dots (5)$$

In this manner they “receive” the balance of their account in the Social Pension Fund when they enter the pension life. Next this balance will be divided by the number of average remaining life which is expressed by the number of remaining vital months. In 1999 the remaining vital months for 65 years old people (average months including female and male) was 184.6 months and for 60 years old people that was 226.1 months.

By the equation (3) we can say that when the inflation rate is 5% and increase rate of nominal wage is 9%, then monthly delivery in the past must be increased every

year by 8%. Therefore the amount of future pension also will be increased by 8%.

The revenue to the Social Pension Fund, as already mentioned, will be increased by 9%. Therefore this difference of 1 % should contribute the budget of the Fund.

In this manner the Polish government considered that after 2010 the Social Pension Fund can be maintained.

### III The reform in 2004

Form March to July of 2004 several new laws were introduced to the pension system.

#### 1) Change of the re-value coefficient of “basic amount KW”

Until July of 2004,

(re-value coefficient of KW) =

$$(\text{nominal wage increase rate} - \text{inflation rate}) * 0.20 + \text{inflation rate}$$

After July of 2004

(re-value coefficient of KW) = inflation rate

This new measure surely will decrease the amount of pension in future.

**Table 8 Consumer price index and nominal wage index  
(previous year=100)**

|                      | 2000   | 2001  | 2002   | 2003   | 2003(1999=100) |
|----------------------|--------|-------|--------|--------|----------------|
| consumer price index | 110.1  | 105.5 | 101.9  | 100.8  | 119.3          |
| nominal wage index   | 111.1  | 108.0 | 102.6  | 104.2  | 128.3          |
| re-value coefficient | 110.25 | 106.0 | 102.04 | 101.48 |                |

In 2003 the re-valued coefficient was 101.48% and nominal wage increase was 104.2%. This new measure may cause conflict among the old generation and the young generation. So the Polish government added another measurement which increases the “basic amount KW”.

In 2005 KW for person who born before 1929 will be 96.5% of national average wage.

After 2006 KW for person who born before 1929 will be 100% of national average wage.

In 2007 KW for person who born after 1930 will be 94.5% of national average wage.

In 2008 KW for person who born after 1930 will be 96.5% of national average wage.

In 2009 KW for person who born after 1930 will be 98% of national average wage.

After 2010 KW for person who born after 1930 will be 100% of national average wage.

This new measure can be interpreted as compromising measure for the old generation and the young generation. In 2010 all female worker, who was born in 1949, will be pensioners. So this measure will ease the conflict between the middle generation and the young generation (born after 1969).

## 2) Change of calculation of “wage index”

“Wage index” was calculated as the average relation of her/his wage to the national average wage in the best continuous 10 years from the viewpoint of amount of her/his wage. Though until 2003 the allowance for sickness, childbirth and childcare was added to their wage, after 2004 this added amount can not exceed the yearly maximal amount which is constituted only by wage.

This new measure also decreases the future amount of pension.

## 3) Change of pension calculation for the middle age who selected also the second pillar

In the Polish pension system in 1998 the new notation of “beginning capita” was introduced. The “beginning capital” is calculated as follows;

If this pension reform was introduced before 1950 and if the worker enters into pension life in January of 1999, then how much will be his virtual balance of his account of the Social Pension Fund? We must take into account that this person has been working from the beginning of his professional life.

The “beginning capital” is defined as the virtual balance in January of 1999 in this manner.

This “beginning capita” also should be re-valued. Until 2003 this “beginning capital” is re-valued by the following coefficient.

$(\text{nominal wage increase rate} - \text{inflation rate}) * 0.75 + \text{inflation rate}$

After 2004 this “beginning capital” is re-valued only by the inflation rate

In 2004 majority of female worker, who was born in 1949, will enter to her pension life. So this new measure will ease the expenditure of the Fund and after 2010 this measure will exert grate influence to the budget of the Fund.

## 4) Change of frequency of re-valuation of the past monthly reservation and the beginning capital.

Until 2004 this re-valuation was done every quarter of year. After 2004 this re-valuation will be done when the consumer price index exceeds 105% of that of the year when the last re-valuation was done. Re-valuation, however, must be done at least once a 3 years. This measure also contributes the budget of the Fund but very little.

## 5) Change of early pension from the reason of dangerous work

Until 2003 person who engaged in special profession, for example, such as policeman, fireman, soldiers, journalist and musician can enter to early pension life at the age of 40-55 for female and 45-60 for male.

After 2004 they can enter to the early pension life, if they can not work in their working place from the reason of restructuring of their health.

Even after 2004, however, public servant, teacher, coal-miner, railroad worker and teacher in University can enter to the early pension life unconditionally.

## 6) More strict approval of disable pension

Until 2003 only a medical doctor's judgment was sufficient, however, after 2004 the medical committee of the Social Pension Fund can protest this judgment and can deny the doctor's judgment. In 1990s' and especially for jobless persons the reason of hernia of backbone was frequently used as the reason for disable pension.

## III Pension system in future

Table 8 GDP, consumer price index and nominal wage ( previous year=100)

|                       | 2000   | 2001  | 2002   | 2003   | 2003(1999=100) |
|-----------------------|--------|-------|--------|--------|----------------|
| G D P (current price) | 111.3  | 105.2 | 102,7  | 104.3  | 125.4          |
| consumer price index  | 110.1  | 105.5 | 101.9  | 100.8  | 119.3          |
| nominal wage index    | 111.1  | 108.0 | 102.6  | 104.2  | 128.3          |
| revalued coefficient  | 110.25 | 106.0 | 102.04 | 101.48 |                |

The revenue of the first and the second pillar will increase proportionally to nominal wage increase. The expenditure of the Social Pension Fund (the first pillar) will increase proportionally to consumer price index. Therefore the financial condition of the first pillar will be eased. In another word the subsidy from the state budge will be decreased and the amount of issue of the State Bond also will decrease

The balance of the second pillar will be reserved by commercial finance assets. The interest rate of these commercial financial assets is usually higher than growth rate of nominal GDP.

We can interpret the Polish pension system as follows; The first pillar sells the State Bond and by this revenue the Fund gives old-age pension. The interest rate of the State Bond is always lower than that of commercial financial assets. In this condition the transfer from the first pillar to the second pillar is favorable.

Figure 1 The Polish pension system before 1998

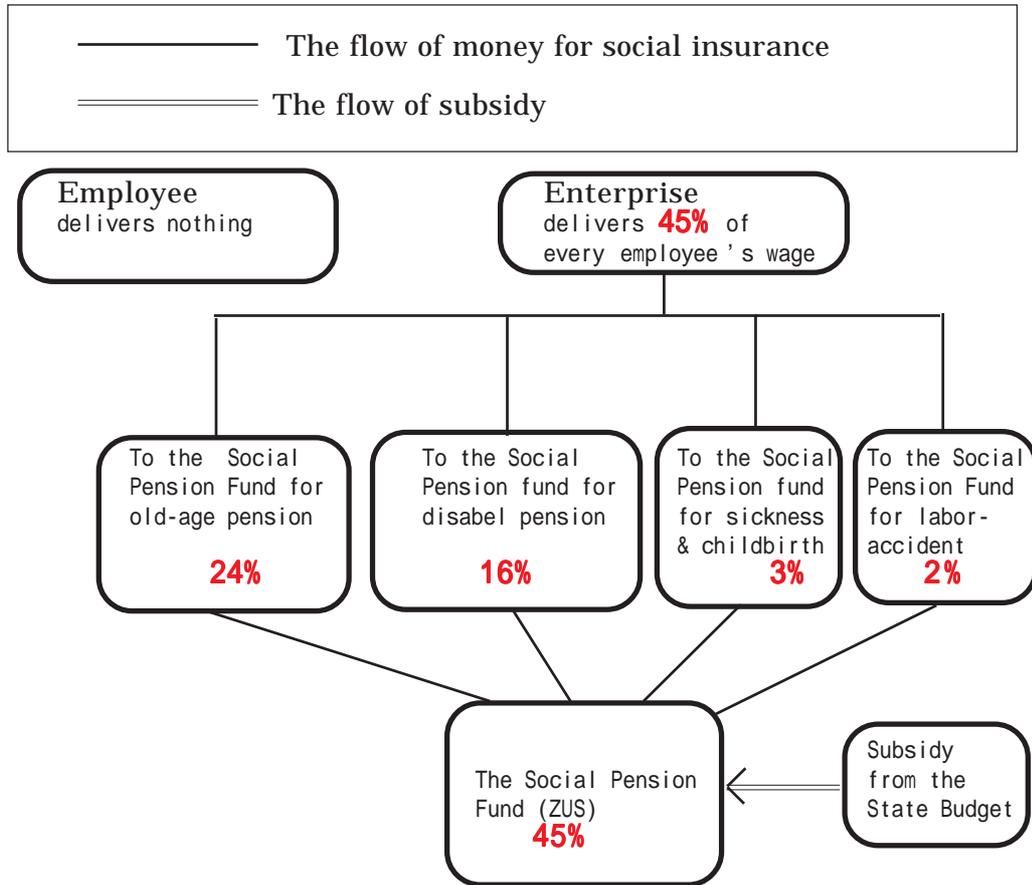


Figure 2 The Polish pension system after 1999

