Does the Dimension of Privately Managed Pension Funds Influence their Performances? Statistical Study in Romania

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***Abstract*—** The present study indicates what is causality relation between dimension of privately managed pension funds in Romania, measured through net assets value and their performances. In this way, on field literature review there are many studies which have analyzed the fluctuation of pension funds performances considering the assets value, their investment allocation, in order to improve the efficiency. The research methodology consists in testing the correlation between the two variables: net assets value and average level-headed return, by means of the multiple linear regression method, on the market level, as well as individually, for each pension fund. Therefore, we have tested two sets of correlations: one considering the value of total net assets, as the dependent variable, and the average rate assessed by the profitability of all privately managed pension funds, as the independent variable, and the other given by the dimension of each pension fund, measured through NAVPS index, and their performance evaluated through the annualized rate of profitability of each privately managed pension fund. The entry data used for this study represent monthly data reported by the official body charged with monitoring the system of private pensions in Romania, PPSSC. The conclusion is that, on a short-term time horizon, a mark-up of total net assets will determine a diminution of the average rate of profitability of all privately managed pension funds, an effect which should be prevent by considering the causes generating this diminution and through the analysis of the investments relying on privately managed pension funds and of their results. These results provide us the impact of the structure of investments relying on privately managed pension funds, and according to this impact, we should elaborate a mixture of fund investments, on a short-term time horizon, dynamic and adaptable to the fluctuations of generated financial returns. Thus, there will be many opportunities for achieving a more effective use of the pension funds and for preventing the diminution of the value of insurants' contributions to these pension funds.

***Keywords*—**net assets, performances, privately managed pension funds, statistical correlations, linear regression method.

Acknowledgments. This paper is suported by the Sectorial Operational Programme Human Resources Development (SOP HRD), financed from the European Social Fund and by the Romanian Government under the contract number SOP HRD/89/1.5/S/62988.

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I. Introduction

On the international level, pension systems are differentially organized, as a combination of a public component and a private one. On the same manner, the European Union has no mutual pension system, available for all Member States, though, most of the Member States of the European Union have approached the multi-pillar pension system outlined by the World Bank.

The private pension systems have acquired major importance, as States have reached different stages of evolution: during the stage of fund collection and during the stage of benefit payment.

The compulsory component of private pensions, the second pillar, stirs up a series of discussions on international level, as, against the economic crisis background, certain States have no longer complied with the initial pension reform model, and we mention here countries in Central and Eastern Europe adopting certain adjustments of contributions to the pension second pillar [6].

In Romania, the pension system is structured, as well, according that proposed by the World Bank, thus: the ***public pension system*** which represents ***pillar I*** and the ***private pension system***, monitored by the Private Pension System Supervising Commission (PPSSC), including two components: ***pillar II*** – *the compulsory component, privately managed,* launched on May 2008, for which, according to the law, we use the collocation *privately managed pension fund*; and ***pillar III*** – *the optional component, privately managed*, introduced on May 2007 [5].

Concerning the ***system of privately managed pensions, pillar II***, it becomes a compulsory system for the individuals newly entered on the work market, below 35 years of age, and remains optional for the rest of the individuals aged under 45, who are already insured and contribute to the public pension system.

The *investments* deriving from the assets of these funds are controlled, monitored and undertaken according to the risk range specific to each fund, in an efficient and prudential manner. Except for one single pension fund administered by Generali, registering a high level of risk, the other 8 pension funds indicate an average level of risk.

The compulsory component of private pensions, the second

pillar, stirs up a series of discussions on international level, as, against the economic crisis background, certain States have no longer complied with the initial pension reform model, and we mention here countries from the Central and Eastern Europe adopting certain adjustments of contributions to the pension second pillar.

The representatives of the European Commission claim that, as the States have assumed the implementation of a certain pension reform model, they should maintain the adopted system, regardless the economic context. The EU influence on the pension system structure adopted by the Member States is limited, against a background of different cultures and economies, considering the specific features and rules for managing the pension systems.

Considering these real issues of the system of compulsory private pensions, numerous studies and analyses were elaborated taking into account the efficiency of investments performed, their guarantee and regulation schemes, as well as other aspects.

Therefore, Schwaiger, Lucas and Mitra have examined the alternative decision making models of performances achieved by pension funds, applying two ratios, namely, the Sortino ratio and the solvability ratio considering a group of countries. The pension fund scores achieved by these countries have been compared according to the total assets value and their allocation, considering the legal constraints enforced by the law on the possibilities of investing the portfolio [8].

Dariusz Stańko achieves for the first time in 2003 a performance evaluation of pension funds in Poland, a country where the public-private pension system was introduced in 1999. The paper indicates that pension fund managers achieve the additional value due to the asset management they apply; the paper also presents few characteristics of the investment behaviour for pension funds, such as: successful investment diversification and positive investment skills [10].

Another paper of reference approaching the pension fund performances is that elaborated by Pablo Antolin, included in the series of OECD working papers on pension funds. The report provides an anlysis of aggregate investment performances of pension funds by country, on risk-adjusted basis applying the Sharpe ratio and Markowitz's mean-variance model for portfolio maximization [1].

Not only the European countries, but also the United States of America has been submitted to the analysis of pension fund performance. A significant work is that revealing the net capital performance covered by defined benefit pension plans (DB) and defined contribution plans (DC) considering the weighted average price method (WAP) and the so-called *benchmarks* of specific pension funds [2].

In Romania, a recent study in this area, dedicated to both components of private pension funds, namely, the second and the third pillar, shows that fund performance "increases concurrently with the dimension of funds with net asset value inferior to 25 million euros and decreases along with the dimension of funds registering a net asset value superior to 25 million euros" [7].

The present study aims at the analysis of the causality relation between the dimension of privately managed pension funds, measured through net assets value and their performances, on the market level, as well as individually, for each pension fund.

II. Problem Formulation

Overall, the assessment of privately managed pension fund performance may be undertaken by means of an index defined as the ***weighted average rate of profitability of all privately managed pension funds*** which, according to the laws currently in force [9], represents the sum of the products between the annualized rate of profitability of each pension fund and the average size of the pension fund for the total amount of privately managed pension funds, on a given period of time.

Each pension fund performance is measured by applying the ***annualized rate of profitability of a privately managed pension fund*** determined by dividing the rate of profitability of that particular fund, assessed for the last 24 months previous to the calculation, to two [9].

The ***profitability rate of a privately managed pension fund on a certain period of time*** represents the natural logarithm of the ratio between the value per share for the last working day of the period and the value per share for the last working day preceding that particular period.

Thus, for the assessment of the dimension of each pension fund, we use the pension fund unit value, an index known as the ***Net Asset Value Per Share*** or the NAVPS index (abbreviated form) which is determined according to the equation 1.

$$NAVPS = \frac{NetAssetValue}{TotalNumberOfFundUnits} \quad (1)$$

PPSSC monthly publishes data concerning the profitability of privately managed pension funds, distinctively reflecting: the weighted average rate of profitability of all optional pension funds for the last 24 months; the rate of profitability of each optional pension funds for the last 24 months; the rate of minimum profitability of all funds.

If the rate of profitability of a privately managed pension fund is inferior to the rate of minimum profit of all pension funds from Romania considered for two sequential quarters, the manager dealing with that pension fund will be submitted to the measure consisting in special supervision, and if this situation persists for 4 sequential quarters, PPSSC is entitled to withdraw the manager's authorization and to enforce the procedure relying on special management [11].

The main indices used in the present study in order to define privately managed pension funds, the second pillar, according to the last reports provided by the PPSSC, include the following aspects [11]:

-the existence of 9 active pension funds, divided into two categories of risk according to the investments performed: funds with an average level of risk (8 funds) and funds with a

high level of risk (one single fund);

-the net assets, of around 1,200 mil. euros (5,373.84 mil. lei), increased with almost 24% as compared to December 2010 and with 3.6% as compared to the previous month; for the analysed period, July 2010 - June 2011, the net assets increased with 59%;

- the NAVPS index of each privately managed pension fund was registering, on the 31st of June 2011 a value varying between 13.8475 – 15.5444 lei;

- the weighted rate of profitability for all privately managed pension funds was of 13.1776%, running lower as compared to the end of July 2010 (the first month considered for the calculation of the rate of profit), while it was almost 16% higher or almost double than the rate of minimum profit of 6.5048%, calculated for the funds registering an average level of risk and of 5.2039%, for the high risk fund;

-the annualized rate of profit of each privately managed pension fund varies between 9.6954 and 13.9718%, for the funds with an average level of risk and indicates a value of 14.2143%, for the only high risk fund existing on the market for this component, designated as *Aripi*.

III. Problem Solution

For testing out which is the causality relation between the dimension of privately managed pension funds and their performances, on the market level, we will check **a first set of correlations** between the *total net asset value*, as the dependent variable, and the *weighted average rate of profitability of all privately managed pension funds*, as the independent variable, monthly data provided by the PPSSC.

The rate of profit of privately managed pension funds is considered for the period including the last 24 months previous to the calculation. As all the 9 privately managed pension funds currently existing on the market were introduced on May 2008, then, the first reports concerning the rate of profit appeared only in July 2010. Therefore, for the analysis, we dispose of a set of 12 remarks corresponding to the period July 2010 - June 2011 [12].

The analysis of the correlation between the identified variables is assessed either by means of the Pearson correlation coefficient (R coefficient), which indicates the intensity and the meaning of the correlation, or globally, applying the linear regression equation.

In Table no 1 reveals the value of the correlation coefficient (R), the value of the determination report (R Square) and the standard error.

Table 1

Total net asset correlations – weighted average rate of profitability for privately managed pension funds, Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.869[a]	0.756	0.731	380.8948	1.707

a. Predictors: (Constant), – Weighted average rate of profitability for all privately managed pension funds

Dependent Variable: Net asset value

The model presents the reliance between the *total net assets* and *the weighted average rate of profit of all privately managed pension funds*, for which the correlation coefficient is 0.869 and a determination report of 0.756. These values confirm the existence of a direct correlation between the two variables, rather strong due to the fact that 75.6% of the fluctuations of total net assets is determined by the modification of the weighted average rate of profitability of private pension funds.

The linear regression coefficient, as well as the other indices estimating the causality relation between the two variables, are illustrated in Table 2.

Table 2

Regression coefficients, privately managed pension funds

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tol.	VIF
1 (Constant)	14269.81	1787.95		7.98	0		
Weighted average rate of profit, private pension funds	-0.66197	119.09	-0.869	-5.56	0	1.00	1.00

Dependent Variable: Net asset value

The *test t* and the *Sig. value* serve for testing the regression coefficients, meaning the hypothesis according to which there is no significant correlation between the dependent variable and the independent variable. According to the present study, the *test t* takes rather high values, while the value of *Sig* is zero, which points out a significant link between the two variables.

The tolerance, whose value is 1, is higher than 1 - Adjusted R square (1 - 0.731 = 0.269), which *eliminates the risk of non-collinearity*.

VIF (Variance Inflation Factor = 1/Tolerance) supports the collinearity analysis, being able to express a non-collinearity if it exceeds the value of 10. In our case, the value of VIF is 1, which confirms the lack of non-collinearity for these variables.

Considering the regression coefficient expressed in column B, Table no 2, the equation no 2 presents the linear model of regression identified for the studied variable:

$$Y = -0.661 \cdot X + 14269.8, \quad (2)$$

where:

Y – total net asset of privately administered pension funds;

X – weighted average rate of profitability for all privately managed pension funds.

From the equation, it results that, according to the database analyzed for the period July 2010 – June 2011, on a short-term time horizon, if the value of total net assets increases with 1

million lei, the weighted average rate of profitability of all privately managed pension funds diminishes with 0.661%.

In order to validate the achieved equation of linear regression, the *chart P-P of regression standardized residuals* will be generated by reporting to the law of standard repartition (Figure no 1).

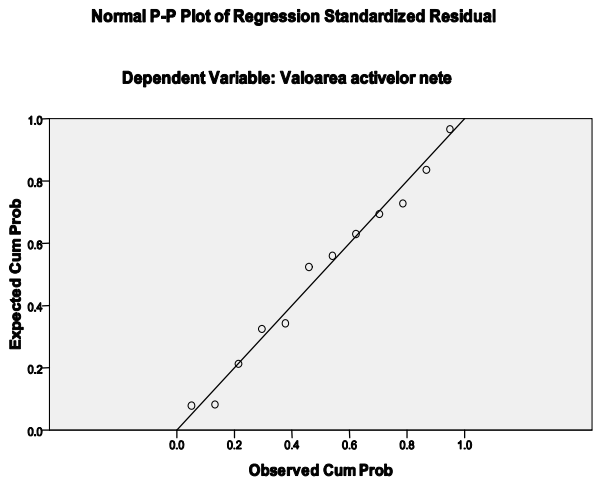

Figure no 1. Chart P-P of regression standardized residuals

Residuals represent noticeable and measurable valuators of statistical errors hard to detect. Generally, residuals respect the law of standard distribution (empirical observation, based on the comparison of marked points reported to the line drawn according to the evolution of these points), so the **regression equation may be applied**. In addition, the Durbin-Watson value (see table 1) is 1.707, included in the statistically admitted interval of 1.5 – 2.5.

For a complex analysis of the causality relation between the size of privately managed pension funds and their performance, we have achieved a **second set of correlations** between the dimension of each pension fund, measured by means of the NAVPS index, and their performance assessed through the annualized rate of profitability of each privately managed pension fund, information obtained from data offered by PPSSC on the site.

Therefore, the main variables applied for testing these statistical correlations are:

- the NAVPS index for each of the 9 privately managed pension funds, as the dependent variable;

- the annualized rate of profitability of each of the 9 privately managed pension funds, as the independent variable.

The 9 existing privately managed pension funds existing in Romania are:

- The pension fund Alico;
- The pension fund Aripi which belongs to Generali;
- The pension fund AZT Viitorul Tau, administrator being Allianz-Tiriac Private Pension;
- The pension fund BCR, which belongs BCR PENSII;
- The pension fund BRD of BRD;
- The pension fund EUREKO of EUREKO;
- The pension fund ING of ING PENSIONS.
- The pension fund Pensia Viva, which belongs Aviva;
- The pension fund Vital, which belongs Aegon.

The results of the correlations between the dependent and independent variables, for each pension fund are presented in the Table 3 to Table 17.

1.The pension fund ALICO

Table 3

Net asset – weighted average rate of profitability correlation for privately managed pension fund "Alico", Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.909a	0.826	0.808	0.1313116	1.213

a. Predictors: (Constant), The annualized rate of profitability

Dependent Variable: NAVPS index

Table 4

Regression coefficients for privately managed pension fund "Alico"

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	17.355	.416		41.7	0		
The annualized rate of profitability	-0.188	0.027	-0.909	-6.88	0	1.0	1.0

Dependent Variable: NAVPS index

2. The pension fund VITAL

Table 5

Net asset – weighted average rate of profitability correlation for privately managed pension fund "Vital", Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.831[a]	0.690	0.659	0.1562124	1.235

a. Predictors: (Constant), The annualized rate of profitability

b. Dependent Variable: NAVPS index

Table 6

Regression coefficients for privately managed pension fund "Vital"

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	16.210	0.567		28.608	0		
The annualized rate of profitability	-0.232	0.049	-0.831	-4.719	0.001	1.00	1.0

a. Dependent Variable: NAVPS index

3. AZT Viitorul tau

Table 7

Net asset – weighted average rate of profitability correlation for privately managed pension fund "AZT Viitorul Tau", Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.815[a]	0.665	0.631	0.1959248	1.186

a. Predictors: (Constant), The annualized rate of profitability

b. Dependent Variable: NAVPS index

Table 8

Regression coefficients for privately managed pension fund "AZT Viitorul Tau"

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	17.530	.712		24.62	0.0		
The annualized rate of profitability	-0.208	0.047	-0.815	-4.454	0.001	1.000	1.00

a. Dependent Variable: NAVPS index

4. Pensia VIVA

Table 9

Net asset – weighted average rate of profitability correlation for privately managed pension fund "Viva Pension", Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.660[a]	0.435	0.379	0.2627156	0.823

a. Predictors: (Constant), The annualized rate of profitability

b. Dependent Variable: Valoarea Unitar? a Activului Net – indicele VUAN

5. BCR

Table 10

Net asset – weighted average rate of profitability correlation for privately managed pension fund "BCR", Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.869[a]	0.755	0.731	0.1830481	0.851

a. Predictors: (Constant), The annualized rate of profitability

b. Dependent Variable: NAVPS index

Table 11

Regression coefficients for privately managed pension fund "BCR"

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	17.726	0.655		27.046	0		
The annualized rate of profitability	-0.244	0.044	-0.869	-5.553	0	1.00	1.00

a. Dependent Variable: NAVPS index

6. BRD

Table 12

Net asset – weighted average rate of profitability correlation for privately managed pension fund "BRD", Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.543[a]	0.295	0.224	0.1934474	0.412

a. Predictors: (Constant), The annualized rate of profitability

b. Dependent NAVPS index

7. EUREKO

Table 13

Net asset – weighted average rate of profitability correlation for privately managed pension fund "EUREKO", Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.806[a]	0.649	0.614	0.2487553	1.284

a. Predictors: (Constant), The annualized rate of profitability

b. Dependent Variable: NAVPS index

Table 14

Regression coefficients for privately managed pension fund "EUREKO"

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	20.248	1.459		13.879	0		
The annualized rate of profitability	-0.446	0.104	-0.806	-4.302	0.002	1.0	1.0

8. ING

Table 15

Net asset – weighted average rate of profitability correlation for privately managed pension fund "ING", Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.699[a]	0.488	0.437	0.2716751	0.741

a. Predictors: (Constant), The annualized rate of profitability

b. Dependent Variable: NAVPS index

9. ARIPI

Table 16

Net asset – weighted average rate of profitability correlation for privately managed pension fund "Aripi", Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.831[a]	0.691	0.660	0.2014628	1.130

a. Predictors: (Constant), The annualized rate of profitability

b. Dependent Variable: NAVPS index

Table 17

Regression coefficients for privately managed pension fund "Aripi"

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	19.536	1.084		18.022	0		
The annualized rate of profitability	-0.329	0.070	-0.831	-4.726	0.001	1.0	1.0

a. Dependent Variable: NAVPS index

The results of the correlations between these variables, individually considered for each privately managed pension fund, are centralized in Table 18.

Table 18

Correlation between the NAVPS index and the annualized rate of profitability of each privately managed pension fund, July 2010–June 2011

Designation of the privately managed pension fund and characteristics of the resulting regression
1. Alico pension fund registering an average level of risk An optimum correlation coefficient (R=0.909), the significance threshold (Sig) is zero. The model may be validated by applying the linear regression equation: $Y = -0.188 \times X + 17.36$ (3)
2. Vital pension fund registering an average level of risk An optimum correlation coefficient (R=0.831), the significance threshold (Sig) is 0.001, below the optimum value of 0.05. The model may be validated by applying the linear regression equation: $Y = -0.232 \times X + 16.2$ (4)
3. AZT Viitorul Tau pension fund registering an average level of risk An optimum correlation coefficient (R=0.815), the significance threshold (Sig) is 0.001, below the optimum value of 0.05. The model may be validated by applying the linear regression equation: $Y = -0.208 \times X + 17.53$ (5)
4. Pensia Viva pension fund registering an average level of risk The correlation coefficient is very low (R=0.660), the Durbin-Watson value is far under the limit of 1.5. The model is not validated.
5. BCR pension fund registering an average level of risk An optimum correlation coefficient (R=0.869), the significance threshold (Sig) is zero. The model may be validated by applying the linear regression equation: $Y = -0.244 \times X + 17.72$ (6)
6. BRD pension fund registering an average level of risk The correlation coefficient is very low (R=0.543). The model is not validated.
7. EUREKO pension fund registering an average level of risk An optimum correlation coefficient (R=0.806), the significance threshold (Sig) is 0.002, below the optimum value of 0.05. The model may be validated by applying the linear regression equation: $Y = -0.446 \times X + 20.24$ (7)
8. ING pension fund registering an average level of risk The correlation coefficient is very low (R=0.699), the Durbin-Watson value is far under the limit of 1.5. The model is not validated.
9. Aripi pension fund registering a high level of risk An optimum correlation coefficient (R=0.831), the significance threshold (Sig) is 0.001, below the optimum value of 0.05. The model may be validated by applying the linear regression equation: $Y = -0.329 \times X + 19.536$. (8)

The equations are numbered from 3 to 8 in the table above, where:

Y – the Net Asset Value Per Share, NAVPS index;

X – the annualized rate of profitability of each privately managed pension fund.

As we may notice, for 3 of the 9 funds (Pensia Viva, ING and BRD), the causality relation between the NAVPS index and the annualized rate of profitability of the pension fund is not confirmed, and for the other 6 funds, there is an indirect causality relation, meaning that, on a short-term time horizon, if the share value of the net asset increases with 1 leu, the annualized rate of profitability of the fund decreases in a certain measure which varies between 0.188% (for the Alico pension fund) and 0.446% (for the Eureko pension fund).

IV. Conclusion

This paper aims at offering a complete evaluation of the causality relation between the net assets of privately managed pension funds and their performances, based on statistical methods and on a series of data consisting in 12 observations. This evaluation is achieved by means of the multiple linear regression equation which allows the estimation of the modification of privately managed pension funds performance according to the increase or decrease of their total net asset.

The conclusions deriving from this study follow the same direction as those reached by Robu and Sandu, denoting that, when exceeding the threshold of 25 million euros (representing privately managed pension funds), the pension fund performance reduces concurrently with the growth of net assets and "increases simultaneously with the size of funds registering asset value inferior to the level of 25 million euros", most of them being optional pension funds, the third pillar [7].

Also, the results achieved are similar to those registered on international level, namely, between the size of pension funds and their performances there is a relation of inverse causality [4], [2].

As such, according to the achieved analysis, we should consider that, on a short time horizon, an increase of the total net assets will determine the decrease of the weighted average rate of profitability of all privately managed pension funds, an effect which has to be counter-balanced by studying the causes leading to this decrease, by analyzing the investments deriving from privately managed pension funds and their results. Another cause, identified by Chan et al. concerning the reversed influence of fund performance depending on asset value, is explained by the high potential transaction costs of these funds [3].

Considering these results, we should elaborate, on a short time horizon, a dynamic mix of their investments able to adapt to the fluctuations of their influence factors. Thus, new opportunities will be generated in order to achieve the efficiency of pension funds and to prevent the diminution of the value of insured individuals' contributions to these pension funds.

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ANNEX

Evolution of representative indices of privately managed pension funds in Romania, second pillar

Table no 1

Period	Net asset value (mil. lei)	Average weighted rate of profit of all private pension funds (%)*
Year 2010		
July	3379.40	15.9928
August	3379.40	15.637
September	3236.30	15.8687
October	4030.70	16.5206
November	4152.40	15.0509
December	4331.91	15.0991
Year 2011		
January	4.501.99	15.0473
February	4.682.88	14.831
March	4.884.65	14.7395
April	5.059.34	14.1045
May	5.184.74	13.7588
June	5.373.84	13.1776

**Data are calculated after 2 years from the creation of privately managed pension funds*

Source: Data processing based on those published on the site of CSSPP, http://www.csspp.ro/evolutie-indicatori/, statistical department – series of data

The Net Asset Value Per Share, NAVPS index – of privately managed pension funds in Romania, second pillar -

- lei -

Table no 2

Period	ALICO	ARIPI	AZT VIITORUL TAU	BCR	BRD	EUREKO	ING	Pensia VIVA	VITAL
Year 2010									
July	14,0562	13,9097	13,8658	13,5361	12,6544	13,3508	14,5715	13,0264	13,1248
August	14,1125	13,9656	13,9198	13,6494	12,7194	13,4327	14,6628	13,0857	13,1866
September	14,2657	14,1356	14,1032	13,8102	12,8042	13,5878	14,8703	13,2308	13,3599
October	14,3219	14,2299	14,1767	13,8812	12,8666	13,7240	14,9273	13,2904	13,4214
November	14,2724	14,1533	14,1748	13,8620	12,8684	13,7873	14,9186	13,2279	13,3226
December	14,4133	14,3322	14,3079	13,9932	12,9630	13,9540	15,1354	13,3740	13,4874
Year 2011									
January	14,5593	14,4559	14,4410	14,1964	13,0379	14,0381	15,2671	13,5424	13,5723
February	14,6769	14,6276	14,5593	14,3154	13,1318	14,2608	15,3792	13,6733	13,6912
March	14,8468	14,7788	14,7098	14,4423	13,2469	14,3810	15,5345	13,8967	13,8473
April	14,9081	14,8566	14,7579	14,5280	13,2698	14,4390	15,6089	13,9257	13,8824
May	14,7563	14,7746	14,6528	14,4441	13,2099	14,3636	15,4814	13,8254	13,7924
June	14,8314	14,8203	14,7588	14,5160	13,2471	14,4387	15,5444	13,8791	13,8475

Source: Data processing based on those published on the site of CSSPP, http://www.csspp.ro/evolutie-indicatori/, statistical department – series of data

The annualized rate of profitability of each privately managed pension fund - second pillar

- % -

Table no. 3

Period	ALICO	ARIPI	AZT VIITORUL TAU	BCR	BRD	EUREKO	ING	Pensia VIVA	VITAL
Year 2010									
July	16.7804	16.3264	16.5483	17.6565	12.2333	14.8338	16.0931	14.7171	12.6995
August	16.5713	16.2021	16.0584	16.6621	12.2355	14.6794	15.7527	14.2006	12.4633
September	16.5819	16.5414	16.4229	15.6118	12.7278	14.8487	16.1752	13.6911	12.5461
October	17.2386	17.1427	17.3019	15.6404	14.3048	15.4252	16.8784	13.6966	12.3698
November	16.2575	16.1024	15.1815	14.1797	13.1961	13.8555	15.5846	12.3447	11.5548
December	14.9881	15.1962	15.1536	14.4079	12.6533	13.7575	16.0363	13.0094	11.5601
Year 2011									
January	14.8865	15.2442	15.032	14.5831	12.6688	13.758	15.9839	13.384	11.5006
February	14.4503	15.1372	15.1155	14.1767	12.4965	13.8491	15.5138	13.1051	11.1365
March	14.3355	15.2444	15.0389	14.0095	12.3124	13.9173	15.3083	13.4563	11.4108
April	13.8574	14.8234	14.0188	13.5092	11.5701	13.6487	14.7582	12.7471	10.9465
May	13,5136	14,6793	13,7486	14,1164	11,128	13,2703	14,2575	12,4124	10,0117
June	12,8509	14,2143	12,8334	13,9718	10,7334	12,9504	13,7128	12,0925	9,6954

Source: Data processing based on those published on the site of CSSPP, http://www.csspp.ro/evolutie-indicatori/, statistical department – series of data