



DISCUSSION PAPER PI-1102

The Choice of Open Pension Fund made by
Citizens of Poland in the Years 2003-2009:
The Analysis of the Criteria

Filip Chybalski

January 2011

ISSN 1367-580X

The Pensions Institute
Cass Business School
City University
106 Bunhill Row London
EC1Y 8TZ
UNITED KINGDOM

<http://www.pensions-institute.org/>

The choice of open pension fund made by citizens of Poland in the years 2003-2009:

The analysis of the criteria

Filip Chybalski

Technical University of Lodz, Chair of Management, Lodz, Poland

e-mail: filipch@p.lodz.pl

January 2011

Abstract

Membership in open pension funds (OPFs) is mandatory for the citizens of Poland. People make two major decisions related to OPFs: concerning the initial choice of pension funds at the start of their professional career and, eventually, concerning the possibility of changing their pension fund. The aim of the paper is to analyze these decisions and the relation between such decisions and the returns, assets and advertising costs of pension funds. The effects of pension funds members behavior on the pension system are also considered in the conclusion.

1. Introduction

Poland's pension reform was started back in 1998 and replaced the universal part of the system based on a single pillar and the pay-as-you-go (PAYG) model with defined benefit (DB). The reform introduced a universal part with two pillars based on defined contribution (DC). The first pillar is based on PAYG (NDC – non-financial defined contribution), the second pillar – on the capital model (FDC – financial defined contribution). The third old-age pension pillar was also introduced. The third pillar is fully voluntary and is also based on the capital model. As a rule, in the universal pension system no pension decisions are taken by citizens in the first pillar. In the second pillar, future pensioners must choose an open pension fund (hereinafter referred to as OPF) to which their contributions will be transferred. They may subsequently switch to any other fund (more than once). Obviously, their decisions will determine both the amount of their future pension, as well as the overall performance of open pension funds. This paper sets out to analyse the pension decisions of Polish citizens in the second pillar, both in the primary market (first-time selection of OPF) and secondary market (subsequent change of OPF).

2. Pension decisions

Polish citizens take a number of different pension decisions, both in the capital accumulation phase and during its distribution. These decisions are related mainly to:

- amount of pension contributions in the voluntary part of the system,
- selection of individual components of the pension portfolio in the voluntary part of the pension system and, if possible, also in the mandatory part of the system,
- timing of retirement and combining retirement and work, if possible,
- forms of pension capital distribution (one-off payment vs. regular pension).

These decisions determine the division of the future pensioner's current income into consumption during employment and retirement. The amount of capital accumulated during employment to be gradually consumed in the retirement phase depends on the amount of old-age pension contributions, period of their accumulation (from the starting date until the date of retirement), and the rate of return in the pension system. This paper focuses on the rate of return in the capital pension system in Poland, and more specifically in Polish open pension funds. The term "rate of return" in a broader sense means the rate of return of an open pension

fund adjusted by the costs of membership, i.e. the rate of return equal to the relative increment of net capital in the pension fund account.

When analysing pension decisions in the second pillar in Poland, we refer to the second category of pension decisions specified above. The choice here is obviously limited, as the type of pension product is imposed on citizens as an individual pension account in an OPF. However, the choice of an OPF is free. Therefore, it should be an informed decision based on rational judgment. As rationality is the key concept here, at this point let us refer to the rational expectations theory. According to this theory, people make choices based on their rational outlook if they analyse any information available in their decision-making process (Samuelson, Nordhaus, 2003; Snowdon, Vane, Wynaczyk, 1998). Needless to say, this information should apply to the components of pension funds that determine the broadly defined rate of return. Based on this information, the citizen is able to maximise the capital accumulated during employment until the date of retirement with the assumed amount of pension contributions. The broadly defined rate of return is the only variable that determines the amount of capital in the pension account and the amount of the future pension, for a given amount of contributions and period of capital accumulation. It may seem that the broadly understood rate of return of an OPF is beyond the control of future pensioners, but it's not true. By choosing an open pension fund, citizens have an impact on market competition. If their decisions are rational, i.e. based mainly on the fund's rate of return and fees and charges as the key criteria of choice, these variables will be used by pension funds to compete with one another. If this is this case, competition is focused mainly on investment efficiency and costs effectiveness. It has a positive impact on the efficiency of the entire second pillar, as pension funds will make an effort to achieve the best rate of return on investments with the lowest fees and charges. To this is end, they must achieve maximum profit and keep costs at the minimum. It also applies to marketing costs, as the funds come to realise that it is their actual performance, not marketing efforts, that will attract more members. On the other hand, if citizens are susceptible to marketing, advertising, and acquisition efforts of pension funds, and the actual results and fees charged by these funds are not the key criteria in the selection process, marketing will be the main area of competition. In this case, investment activities of pension funds are not a priority, as their performance is not the key criterion of choice. These funds will implement rather conservative investment strategies, especially considering that under the Polish law pension funds are not sufficiently rewarded for rates of return above the

average, but they are severely punished for generating rates of return that are considerably lower than the market average.

Experts point out that wrong pension decisions may result not only from insufficient access to information or costs of its acquisition, but also (if not primarily) from problems relating to information processing. Wrong decisions increase administrative costs of a pension system and reduce its effectiveness (cf. Barr, Diamond, 2006; Barr, 2006; Arza, 2008).

In the second pillar, Polish citizens have two choices to make:

- the first choice of an open pension fund – first-time employment,
- a decision to switch to another open pension fund. The latter decision is referred to as the so-called transfer.

The amount of future pension depends on whether these decisions are based on the characteristics of an open pension fund that determine their broadly defined rate of return. These criteria refer to the fund's market position, its investment efficiency, or fees charged by the fund. They are described in more detail below (Chybalski, 2006). This description contains the criteria based on variable features of open pension funds available for the general public.

Open pension funds operating in the competitive market take a specific market position that can be measured based on two methods: as a percentage of the fund's members in the total number of all members of all open pension funds in Poland; or as a percentage of the fund's assets in the aggregate OPF asset base, i.e. total assets of all open pension funds. The relative size of an open pension fund is a key criterion for its members for a number of reasons. First, larger funds offer better investment opportunities. On the other hand, however, funds with smaller investment portfolios are quicker to respond to changes in financial markets and more flexible when the structure of investments must be reorganised. In addition, the OPF market, just as any other competitive market, may offer the economies of scale – bigger funds usually offer lower unit costs, which results i.a. from a more effective distribution of fixed costs over a higher number of members. And thirdly, a large fund is less likely to be taken over by another fund. This criterion is also important, as members of smaller funds may be forced to join a different OPF as a result of a take-over. It is a risk to consider, as the number of funds dropped from 21 to 14 since OPFs first appeared in the Polish market back in 1999 until the end of 2009, and this trend is likely to continue in the future. It must be noted that the selected OPF may be changed at any time, but this procedure

always involves certain costs, such as the time needed to effect such a change. Considering the high number of members assigned to OPFs as a result of a draw (in some periods even up to 50% of all eligible citizens), i.e. those members that did not make a conscious decision to join an open pension fund (be it for lack of knowledge or lack of time), this factor seems important.

The rate of return based on an accounting unit (AU) is a statutory measure of OPF performance. The value of an accounting unit is equal to the price of a unit of a member's share in the fund (share unit), and changes in accounting units are correlated with changes in the value of the fund's assets determined by investment results. The rate of return based on AUs, computed for 3-year periods as at the end of Q1 and Q3 is a defective measure to a large extent, as it only considers the value of AUs as at the end of the accounting period, without any regard to the regular monthly transfers of pension contributions to a member's account. Still, it is the only official measure of the investment performance of Polish open pension funds published by the supervisory body – the Financial Supervision Authority (FSA).

Fees charged by general pension societies is the price paid by every member of open pension funds. These fees are charged on the transfer of contributions and management of assets (transfer and management fees). Almost all funds in the analysed period set their fees at the same level. Therefore, this criterion will be disregarded in our analyses, as these fees are not a differentiating feature.

The value of assets of a pension society managing a given OPF may serve as another criterion of choice. Not only is it used to determine the market standing of a pension society, but is also important as the fund fails to achieve the minimum required rate of return. If the capital accumulated in the OPF reserve account and an additional account of the Guarantee Fund prove insufficient, this shortage will be covered by the pension society.

3. Data and methodology

The study will cover the analysis of a relationship between changes in the absolute number of members during a year (including the balance of transfers and number of persons selecting a given pension fund for the first time when entering the job market), the annual inflows and outflows of members as a result of transfers, and the variables used to describe the market position of a given OPF (number of members and asset base), the market standing

of a given pension society (assets), investment efficiency (value of an accounting unit and rate of return), as well as acquisition and marketing expenses of pension societies. As regards the OPF's rate of return, we will consider its values as at the last day of Q1 and Q3 in a given year – under the applicable law, these are the dates of determination and publication of 3-year rates of return of open pension funds (until the end of Q1 2004, a 2-year rate of return had been published every quarter, but our analyses consider its value as at the end of Q1 and Q3). In addition, we considered annual rates of return calculated for periods ending on the dates of publication of the statutory 3-year rates of return, i.e. as at the end of March and September. The value of an accounting unit taken into account in our analysis was recorded at the end of periods for which the 3-year rate of return was estimated, i.e. as at the last day of Q1 and Q3 of a given year and the last day of Q1 and Q3 three or two years before, depending on the adopted rate of return. In their decision-making process, Polish citizens may be influenced by information and data that is more or less up-to-date, and the most up-to-date information available in Q1 is related to the previous year-end. Therefore, we analysed correlations between the variables describing inflows and outflows of OPF members and the variables describing its market position, efficiency, and acquisition and marketing activities in the same year and separately in the previous year. As a result, we were able to consider a delay in the decision-making process vs. the availability of information, and a possible delay in the results of the acquisition and marketing activities of pension societies. As a result, our findings will be more objective. Our correlation analysis disregards fees charged by OPFs; almost all OPFs adopted equal fees and they cannot be used as a differentiating factor. Our analysis of potential correlations existing between variables is based on the Pearson linear correlation coefficient and a test of its significance. The adopted significance level is $\alpha=0.05$.

4. Results

First of all, we analysed decisions related to the selection of OPFs and correlations between the absolute change in the number of OPF members, inflows and outflows caused by transfers, and the selected variables adopted to describe these OPFs. Results of the correlation analysis are presented in Tables 1-6. Correlation coefficients with statistical significance are highlighted in bold print.

Table 1. Correlation between the absolute change in the number of OPF members and the selected variables, delays excluded

Variable / Year	2003	2004	2005	2006	2007	2008	2009
Number of OPF members	0.69	0.37	0.13	0.67	0.79	0.36	0.51
OPF assets	0.67	0.35	0.23	0.66	0.79	0.23	0.19
Pension society assets	0.69	0.35	0.27	0.74	0.75	0.15	0.27
AU March (opening balance)	-0.08	0.59	0.45	0.60	0.30	-0.19	0.22
AU March (closing balance)	0.44	0.74	0.53	0.63	0.37	0.07	0.22
3-year rate of return (end of March)	0.52	0.55	0.36	0.18	0.25	0.19	0.23
Annual rate of return (end of March)	0.30	-0.44	0.16	-0.16	0.10	0.12	0.37
AU September (opening balance)	0.09	0.37	0.51	0.53	0.27	-0.16	0.21
AU September (closing balance)	0.33	0.70	0.53	0.57	0.40	0.22	0.25
3-year rate of return (end of September)	0.29	0.35	0.28	0.18	0.39	0.33	0.46
Annual rate of return (end of September)	0.52	0.26	0.09	0.13	-0.04	0.85	0.22
Acquisition and marketing	0.87	0.55	0.27	0.75	0.75	0.27	0.83

Source: own study based on data published by the Polish Financial Supervision Authority (the FSA)

Table 2. Correlation between the absolute change in the number of OPF members and the selected variables, delays included

Variable / Year	2003	2004	2005	2006	2007	2008	2009
Number of OPF members	0.68	0.31	0.06	0.64	0.77	0.24	0.48
OPF assets	0.11	0.33	0.21	0.64	0.79	0.09	0.18
Pension society assets	0.62	0.29	0.33	0.74	0.77	0.10	0.17
AU March (opening balance)	-0.09	0.13	0.45	0.52	0.37	0.04	0.05
AU March (closing balance)	0.27	0.73	0.48	0.63	0.44	0.01	0.32
3-year rate of return (end of March)	0.33	0.60	0.27	0.46	0.22	0.13	0.18
Annual rate of return (end of March)		0.63	0.04	0.58	-0.05	0.04	0.16
AU September (opening balance)	-0.34	0.37	0.22	0.54	0.32	-0.15	0.01
AU September (closing balance)	0.37	0.76	0.50	0.69	0.40	-0.32	0.33
3-year rate of return (end of September)	0.60	0.51	0.31	0.60	0.26	0.27	0.43
Annual rate of return (end of September)		0.50	0.37	0.30	0.30	0.33	0.51
Acquisition and marketing	0.55	0.47	0.23	0.75	0.60	0.16	0.77

Source: own study based on data published by the FSA

Table 3. Correlation between inflows of members to OPFs as a result of transfers and the selected variables, delays excluded

Variable / Year	2003	2004	2005	2006	2007	2008	2009
Number of OPF members	0.29	0.18	0.26	0.56	0.78	0.77	0.38
OPF assets	0.24	0.12	0.21	0.54	0.77	0.45	0.08
Pension society assets	0.36	0.22	0.35	0.61	0.77	0.33	0.19
AU March (opening balance)	0.01	0.35	0.32	0.40	0.19	-0.31	0.32
AU March (closing balance)	0.37	0.28	0.28	0.28	0.10	0.24	0.39
3-year rate of return (end of March)	0.36	0.03	0.06	-0.15	-0.13	0.37	0.14
Annual rate of return (end of March)	0.19	-0.22	0.46	-0.49	-0.03	0.30	0.27
AU September (opening balance)	0.10	0.19	0.35	0.26	0.16	-0.14	0.23
AU September (closing balance)	0.25	0.27	0.34	0.20	0.14	0.40	0.37
3-year rate of return (end of September)	0.19	0.10	0.16	-0.11	0.02	0.77	0.31
Annual rate of return (end of September)	0.36	-0.31	0.36	-0.23	-0.29	0.49	0.23
Acquisition and marketing	0.68	0.83	0.79	0.92	0.91	0.92	0.84

Source: own study based on data published by the FSA

Table 4. Correlation between inflows of members to OPFs as a result of transfers and the selected variables, delays included

Variable / Year	2003	2004	2005	2006	2007	2008	2009
Number of OPF members	0.26	0.15	0.24	0.54	0.77	0.76	0.34
OPF assets	-0.08	0.10	0.19	0.52	0.76	0.24	0.15
Pension society assets	0.45	0.21	0.39	0.64	0.77	0.19	0.05
AU March (opening balance)	0.13	0.00	0.32	0.39	0.34	-0.01	-0.16
AU March (closing balance)	0.19	0.44	0.19	0.35	0.21	-0.05	0.43
3-year rate of return (end of March)	0.09	0.44	-0.10	0.08	-0.16	0.27	0.14
Annual rate of return (end of March)		-0.04	-0.10	0.61	-0.47	0.14	0.03
AU September (opening balance)	-0.06	0.19	0.23	0.40	0.21	-0.17	-0.18
AU September (closing balance)	0.32	0.31	0.19	0.43	0.15	-0.33	0.39
3-year rate of return (end of September)	0.35	0.17	-0.02	0.28	-0.13	0.76	0.27
Annual rate of return (end of September)		0.32	0.18	0.41	-0.19	0.79	0.39
Acquisition and marketing	0.41	0.61	0.73	0.92	0.84	0.91	0.73

Source: own study based on data published by the FSA

Table 5. Correlation between outflows of members from OPFs as a result of transfers and the selected variables, delays excluded

Variable / Year	2003	2004	2005	2006	2007	2008	2009
Number of OPF members	0.64	0.72	0.79	0.77	0.73	0.29	0.93
OPF assets	0.56	0.70	0.78	0.74	0.70	0.33	0.18
Pension society assets	0.63	0.66	0.72	0.61	0.63	0.06	0.10
AU March (opening balance)	-0.10	-0.05	0.09	0.15	0.13	-0.57	-0.31
AU March (closing balance)	-0.24	-0.23	-0.03	-0.02	-0.06	0.13	-0.25
3-year rate of return (end of March)	-0.14	-0.37	-0.22	-0.27	-0.37	0.21	0.26
Annual rate of return (end of March)	-0.10	-0.34	0.67	-0.49	-0.08	0.07	0.14
AU September (opening balance)	-0.18	-0.04	0.04	0.08	0.06	-0.30	-0.39
AU September (closing balance)	-0.24	-0.28	0.09	-0.06	0.00	0.30	0.00
3-year rate of return (end of September)	-0.10	-0.25	0.14	-0.36	-0.09	0.22	0.93
Annual rate of return (end of September)	-0.14	-0.26	0.17	-0.15	-0.46	0.58	0.63
Acquisition and marketing	0.56	0.34	0.39	0.52	0.74	0.39	0.62

Source: own study based on data published by the FSA

Table 6. Correlation between outflows of members from OPFs as a result of transfers and the selected variables, delays included

Variable / Year	2003	2004	2005	2006	2007	2008	2009
Number of OPF members	0.60	0.76	0.81	0.79	0.74	0.24	0.92
OPF assets	0.18	0.72	0.79	0.75	0.70	0.12	0.15
Pension society assets	0.65	0.76	0.71	0.65	0.61	0.01	0.16
AU March (opening balance)	-0.11	-0.01	0.09	0.16	0.30	-0.18	0.07
AU March (closing balance)	-0.17	-0.16	-0.07	0.02	0.09	-0.30	0.04
3-year rate of return (end of March)	-0.09	-0.16	-0.27	-0.22	-0.32	0.13	0.23
Annual rate of return (end of March)		-0.19	-0.52	0.64	-0.65	-0.02	0.09
AU September (opening balance)	-0.06	-0.04	0.07	0.18	0.19	-0.26	-0.21
AU September (closing balance)	-0.21	-0.17	-0.15	0.15	0.02	-0.56	0.36
3-year rate of return (end of September)	-0.15	-0.17	-0.21	0.05	-0.42	0.19	0.92
Annual rate of return (end of September)		-0.27	-0.14	0.07	-0.27	0.31	0.87
Acquisition and marketing	0.62	0.56	0.42	0.53	0.69	0.34	0.78

Source: own study based on data published by the FSA

Findings based on the results of the correlation analysis are as follows:

1. For the majority of annual periods under analysis, there is a significant positive correlation between the absolute annual change in the number of OPF members and the following variables (delays excluded): number of OPF members, value of OPF assets and pension society assets, value of the accounting unit at period end (for which the rate of return is estimated), and value of acquisition and marketing outlays made by pension societies. However, if we consider the time shift of 1 year, there is a significant positive correlation between the absolute annual change in the number of OPF members and the number of OPF members, value of OPF assets and pension society assets, as well as the value of acquisition and marketing outlays made by pension societies.
2. For the majority of annual periods under analysis, there is a significant positive correlation mainly between the number of new members joining a given OPF as a result of transfers and the value of acquisition and marketing outlays made by pension societies. In a number of periods, a significant correlation was observed between the number of OPF members and the value of assets of OPFs and pension societies. A similar trend is observed if we consider the time shift, with an additional significant correlation in the past two years with the value of OPF assets.
3. For the majority of annual periods under analysis, there is a significant positive correlation between the number of members leaving OPFs and the following variables (delays excluded): number of OPF members, value of assets of OPFs and pension societies, and the value of acquisition and marketing outlays made by pension societies. A similar trend is observed if we consider the time shift between variables.
4. Both for the absolute change in the number of OPF members and the value of inflows to and outflows from OPFs, a significant correlation with the fund's rate of return is rarely observed. In addition, a significant positive correlation was observed between the number of members leaving the fund in 2009 and the annual rate of return generated in September in the previous year, which means that the higher the fund's annual rate of return, the more members are likely to leave the fund. In 2005 and 2007, this correlation was negative – the higher the fund's annual rate of return, the fewer members would leave the fund.

Therefore, we arrived at a synthetic conclusion that Poles choose their pension fund based on its size, measured both as a number of members and the value of assets, and the value of assets of a pension society, but the significant correlation is observed mainly between the number of people joining an OPF and the amount of acquisition and marketing outlays of a

pension society. This variable is also positively correlated with the number of members leaving their funds as a result of transfers, which may suggest that funds focusing on the acquisition of new members and spending considerable amounts for this purpose tend to lose a significant number of the existing members. However, there is also a statistically significant positive correlation between the fund's size and outlays made by the corresponding pension society on acquisition and marketing activities, which may suggest a correlation between these outlays and the number of members leaving the fund. On the other hand, for the majority of annual periods under analysis, there is no correlation between the number of members joining or leaving the fund and the OPF's rate of return.

5. Summary

Our analysis allowed us to analyse pension decisions of Poles as regards the selection of open pension funds. The study provided the basis for the following synthetic conclusion:

When choosing open pension funds, Poles do not focus on their investment performance, but are possibly influenced by acquisition and advertisement activity of OPFs. More and more Poles decide to change their fund, but their decision is not based on the fund's performance – they are usually persuaded by OPF sales agents. This situation did not change in the period of financial crisis.

The decision-making process of Poles choosing an open pension fund cannot be rationalised. It creates a major barrier to the growth of the second pillar, and, by extension, the entire pension system. Funds are aware that the selection process is not based on their rates of return or amount of their fees, i.e. the key variables determining the amount of their future pension, and they focus on acquisition and advertisement activities to attract new members. On top of that, the system of OPF financing is based on distribution fees on pension contributions as the main source of the fund's revenues. As a result, acquisition of new members is to the benefit of the fund. Our study clearly indicated the need for further OPF education in Poland. The expected legal changes relating to open pension funds and focusing on the increase of their efficiency will not prove successful unless funds are forced to compete for their clients. The law alone will not force OPFs to improve their performance.

References:

- Arza C. [2008], *The limits of pension privatization: Lessons from Argentina Experience*.
World Development, Vol. 36, No. 12, pp. 2696-2712
- Barr N. [2006], *Pension: overview of the issues*, Oxford Review of Economic Policy, Vol 22,
no. 1,
- Barr N., Diamond P. [2006], *The economics of pensions*, Oxford Review of Economics
Policy, Vol. 22, No. 1.
- Chybalski F. [2006], *Kryteria wyboru OFE*, [in:] I. Staniec (ed.), "Sposób na pieniądz" Łódź.
- Samuleson P.A., Nordhaus W.D. [2003], *Ekonomia. Tom 1*, Wydawnictwo Naukowe PWN.
- Snowdon B., Vane H., Wyncarczyk P. [1998], *Współczesne nurty teorii makroekonomii*,
Wydawnictwo Naukowe PWN, Warszawa.