

# **Fees and performance of Italian pension funds: the “price” for participants**

NICOLETTA MARINELLI<sup>1</sup>

Università Politecnica delle Marche - Dipartimento di Economia

*Email: n. marinelli@univpm.it*

## **1. Introduction**

Following the last Italian welfare reform, the number of participants in private pensions schemes has increased substantially<sup>2</sup>. Problems that arise from the ever growing volume of pension fund assets include how to efficiently invest them and the appropriate pricing of the services to render them affordable to participants. Pension funds differ from other investment vehicles in the sense that they are pooled assets to fund pensioners during retirement. So the issue of their pricing is particularly important, both in financial and social terms.

So that the adhesion to a pension fund can truly offer benefits to Italian workers is essential that administrative and financial expenses borne by the savers are low. Otherwise, the advantages of Italian pension funds analysed in Cesari, Grande and Panetta (2007) and associated with the possibility of investing the social security saving in market activities, the benefit of a contribution from the employer and the strong fiscal incentives would risk being heavily curtailed; in some cases, they could even be cancelled just being reflected in an increase of the returns of the intermediaries who render the service to the funds, instead of in an improvement of the living conditions of the future pensioners. Slight differences in the pension fund management fees, accumulated over a long time span, determine considerable differences in the final capital which will be recognized by the pension fund to the worker upon retirement<sup>3</sup>.

In this paper, we seek to address the issue of pension plan pricing from the pension holder's perspective. In this sense, the “price” to participate in a pension scheme may be expressed as the charges paid for administration costs and financial services. These charges reduce the rate of return on the investments and consequently increase the cost of retirement.

The starting point of our research originates from two empirical evidences. Firstly, charge reduction and transparency represent fundamental aspects for developing supplementary security, even more in the changed Italian legislative framework which has equalized occupational and individual pension schemes, entrusting the competition between the various forms with the aim of maximising market efficiency and the level of the supporter's welfare<sup>4</sup>. Increased competition in social security products constitutes an incentive towards the least efficient providers to improve the offer quality.

---

<sup>1</sup> Assegnista di ricerca in Economia degli Intermediari Finanziari (SECS/P11) – Università Politecnica delle Marche – Facoltà di Economia

<sup>2</sup> In 2007, the number of participants in private pension schemes has increased by 43,2% and the assets under management have grown by 12% in one year. See Covip (2007).

<sup>3</sup> For example, Cesari, Grande and Panetta (2007) show that, due to the management fees only, the total amount accumulated by the worker in 30 years would turn out to be 14 per cent lower than what would be obtained in the absence of charges if the fee were equal to 0,5 per cent annual and 36 per cent lower if the fee rose to 1,5 per cent.

<sup>4</sup> The Italian pension system is organized into three pillars: the first pillar is the public pension scheme, while the second and the third ones are private and related to complementary schemes. The last Italian Welfare reform (D. Lgs. 252/2005) has put all these pension products (open, closed, insurance-based pension plans) on the same level in terms of benefits for potential participants.

Nevertheless, the increase in the offer also risks causing excessive market fragmentation, making scale economies more difficult to be realized; information asymmetries could additionally let less competitive funds survive thereby turning to moral hazard practices. If not adequately supported by initiatives in favour of an aware participation in pension funds by workers, there is the risk that the increase in the offer and of the competition leads to an increase rather than a reduction in the cost level<sup>5</sup>.

Secondly, in spite of attempts by regulatory authorities to improve their transparency and comparability, the suspicion remains that the structure and scale of pension plan charges is not well understood by consumers<sup>6</sup>.

Following this evidence, we focus on the “price” to participate in an Italian open pension fund using the pension holder’s perspective. This analysis relates and innovates on two lines of research. First, there are a number of studies that investigate how pension fund characteristics affect the operating costs of pension schemes around the world (e.g. Bateman and Mitchell, 2004; Dobronogov and Murthi, 2005, James, Smalhout and Vittas, 2005). Second, while little is known about the costs of pension funds from the perspective of the participant (e.g. Whitehouse, 2001, Cesari, Grande and Panetta, 2007), there is a large amount of literature that addresses costs and performance of mutual funds. Thus, such studies can also provide useful insights into the evaluation of pension funds.

The study examines the impact of fees using data on the specific charges for all Italian open pension funds that were effective at 31st January 2009, for a total of 350 investment lines, as classified by Assogestioni; the data collection was made in the period January-March 2009, using information contained in the regulations and the informative notes derived from the internet sites of each pension fund.

The paper discusses alternative measures of charges. Measuring the cost of financial services is more difficult than comparing the cost of other goods or services. Fees can take many different forms, interacting and accumulating in complex ways, particularly with long-term products, such as pension funds. This often means that the cost of financial services may be not transparent. The most familiar summary measure of pension fund charges is the “reduction in yield”; this adds all the charges over the lifetime of an example pension policy and expresses them as a percentage of assets. Measuring charges as a proportion of contributions is the alternative; this turns out to be the same as calculating lifetime charges as a proportion of the balance accumulated at retirement. This second measure is known as the “reduction in contributions”. We use

---

<sup>5</sup> In a recent OECD publication concerning the cost level in the pension systems of South American and East European countries, Australia and Sweden, there is the following remark: “ While competition is normally expected to bring down costs, individual account pension markets behave in a counterintuitive manner. Marketing and sales agents have been used in the past to encourage members to switch providers, leading to an increase in operational expenses and fees. As members are not very responsive to higher fees, systems that a priori seemed to be highly competitive and with many players, have actually turned out to do rather poorly in terms of fees” (Tapia and Yermo, 2008). As regards Italy, with reference to the specific segment of the individual adhesions, Covip underlines that the cost reduction process appears to be difficult, being a market prevalently drawn by the offer with important informative asymmetries between distributors and pension plan participants. See Covip (2007).

<sup>6</sup> There is a great amount of international literature about problems related to the low level of financial literacy among pension fund participants. See, among others, OECD (2008). With specific reference to US 401(k) plans, Kopcke, Vitagliano and Muldoon (2009) outline that “...fees are so complex, confusing or obscure that members do not understand either their magnitude or their consequences.” Other studies focused on Poland and Chile prove the same evidence, highlighting a low level of awareness about costs among pension fund participants. See Chlon-Dominczak (2000) and Martinez and Sahm (2005).

both measures of charges, following and adapting the methodology suggested by Blake and Board (2000) to the Italian framework. We show that the ranking of funds does not significantly change using one indicator or another; anyway, even if it is less used, people seem to be more confident with a measure of charge expressed as a percentage of contributions.

A first related issue concerns the connection between costs and performance of Italian open pension plans. There is an ongoing debate as to whether personal pension plans deliver investment returns high enough to justify their charges (see Blake and Board, 2000). In order to test this hypothesis, we collect data on actual pension fund risk-adjusted performance, to identify a possible relationship between costs and performance. We find that, on the basis of the existing evidence, there is no clear relationship between charges and performance. In particular, we find that there is no support for the argument that high charges can be justified by the promise of the superior performance that such high charges might be able to purchase. We may therefore conclude that, *ceteris paribus*, stakeholders are likely to be best served by pension funds with low overall costs.

A second related matter is concerned with how pension holders choose between competing plans. In this sense, it is interesting to investigate what seems to drive the effective choices made by pension fund participants, as derived from the actual participation rate in each plan. Since participant choice could be affected by aspects other than costs and performance, explaining the actual participation rate may need further investigation, that takes additional environmental and structural variables into account.

The remainder of this paper proceeds as follows. Section 2 describes the Italian regulatory framework about open pension fund charges. Section 3 discusses the main measures of charges proposed in literature to express the costs of long-term financial products, such as pension funds; these measures are the “reduction in yield” and the “reduction in contribution”. Section 4 focuses on the Italian context, presenting summary statistics about Italian open pension funds costs and applying to our sample the charge measures previously described. Section 5 discusses the model we apply to relate costs with the performance of pension funds and presents estimates of this model; some preliminary considerations about the actual participation rate in each plan are also provided. Finally, section 6 draws conclusions.

## **2. A taxonomy of Italian open pension fund charge structure**

The coming into effect of the new Italian legislative framework and the equalization of all the supplementary pension forms have made the costs applied by alternative complementary pension schemes even more of a central issue. The Italian supervisory authority has chosen not to fix limits to the applicable charges, in accordance with a model of free competition<sup>7</sup>. However, some prudential measurements have been arranged; following indications contained in the article 14 paragraph 6 of D. Lgs. 252/2005, pension fund providers are expressly prohibited from practising commission

---

<sup>7</sup> Countries have taken very different approaches to charges. Some countries limit the charge structure, so that only one or two types of charge are permitted from the possible menu. For example, Poland is slightly restrictive, in that companies are limited to two charges, one of which is subject to a ceiling; Sweden has a single charge up to ceiling, but the limit varies with a complex formula to try to allow for pension fund managers with different costs; finally, the United Kingdom, with its stakeholder scheme will have a single charge with a low ceiling. For details see Whitehouse (2001).

levels such as to bind the portability of the social security position<sup>8</sup>. Moreover, Covip has worked to enhance pension funds costs disclosure and comparability; firstly, it has provided a uniform structure of costs representation in the informative note of each fund and secondly it has come to a definition of a new charge measurement to represent and compare the price of various pension plans offered (*indicatore sintetico di costo* - ISC)<sup>9</sup>. Covip also required that the ISC was reported in the informative note of each plan and, in addition, publishes a list with the relevant values on its institutional site, normally updating it with monthly cadence.

This section outlines some of the key charge categories applied by Italian open pension funds. The focus of this paper is on charges paid at the “accumulation phase”, when contributions and investment returns are accruing in pension accounts. Charges during the “withdrawal phase” (e.g. for purchasing an annuity) are not covered, as they do not actually appear to be a driver of competitive differentiation by market operators<sup>10</sup>.

Following the typical schedule of fees reported in article 8 of the regulation scheme of Italian open pension funds, charges can be broken down into five main categories, as summarized in Table 1. A distinction is made between administrative charges, i.e. those fees paid to cover the costs of the organizational structure and financial charges, i.e. those fees related to the financial service provided.

**Table 1: Italian open pension funds charge structure**

Type of charge	Nature	Main characteristics
<i>One-off entry charge</i>	Administrative fees	It is paid at the beginning of the participation and it is generally used for early recovery of pension fund start-up costs; sometimes it is retreated (in all or partly) to distribution agents.
<i>Fees directly charged by participants</i>	Administrative fees	They are periodic payments that participants made generally on an annual basis, as a fixed sum or in percent of contributions; they serve to cover pension fund maintenance costs.
<i>Fees indirectly charged by participants</i>	Financial fees	They are periodic payments that are levied on participants generally on an annual basis, as remuneration for the financial service provided by the fund. They include the asset management fee, defined as a percentage of assets and the performance fee, applied to the difference between the pension fund returns and a reference parameter.
<i>Exit fees</i>	Administrative fees	They are provided for the case of total or partial exit from the fund, such as anticipation, transfer to another fund, redemption or for the case of total or partial exit from the investment line, such as individual position or contributions reallocation intra-fund.
<i>Trading costs</i>	Financial fees	They are costs related to the buying/selling of securities where contributions are invested; they could be both explicit (e.g. stamps,...) or implicit. If implicit, they are not easily quantifiable, as they are directly charged against the value of assets as trades occur.

<sup>8</sup> See Covip Resolution of 28th June 2006- “Direttive generali alle forme pensionistiche complementari”.

<sup>9</sup> Starting from some basic assumptions, the ISC measures the impact of fees upon pension fund annual returns compared to a zero-load pension fund, for a maximum participation period of 35 years.

<sup>10</sup> Please note that, for analogy, the evaluation of the tax benefits granted to the supplementary security is also excluded by the present analysis.

As derived from Table 1, charges can be proportioned in a fixed sum or a percentage of contributions or on fund's assets. Each proportioning methodology produces different allocative and distributive effects, upon participants and upon pension funds.

For example, costs in fixed sums are easily understood by participants and facilitate comparisons between the funds; however, with reference to the fairness profiles they produce regressive effects to the detriment of the workers with a lower income level. On the contrary, costs proportioned as percentage of the pension plan contribution risk penalizing more the participants with bigger contributing levels (generally the higher income savers). Moreover, the burden of such costs would only weigh on the supporters who truly contribute to the fund and not on those participants who, also adhering, interrupted the contributing flow. Finally, charges expressed as a percentage of pension plan's assets pose the problem of also weighing upon those participants that have interrupted the contributing flow but have not decided to be get out of the fund. Moreover, these kind of charges could stimulate the search for bigger profitability in the short-term, to the detriment of long-term investment, most suitable for realizing the fundamental pension fund mission (see Mefop, 2009).

A further distinction is generally made between *front-loaded* charges, i.e. charges extracted prior to the delivery of the service to which they relate, and *back-loaded* charges, i.e. charges extracted afterwards. Front-loaded charges, providing company revenues early on, do not tend to provide the best incentive to deliver good service (see Blake and Board, 2000).

### 3. Measuring charges

The variety of charging structures illustrated above indicates the need for a summary measure of the impact of charges. Summarising the different fees in a single number raises a host of complex issues. First of all, there are, in theory and in practice, many different kinds of charges levied on a pension plan (one-off or periodic fees, fixed or proportional charges, front-loaded or back-loaded commissions); their impact on the individual position is different, according to the level of income and the amount accumulated in the fund. Secondly, it is very difficult to determine the total charge that will be levied on a particular fund, principally because of the complex interactions between the components of the total charge (see Blake and Board, 2000). Finally, pension funds are financial saving products which have a long period horizon, so the only meaningful calculation is over the lifetime of pension membership, which goes from the adhesion to the social security plan up to that of the retirement. Such measurements evidently require a simulation of the periodic payments and of the expected returns, on the basis of some hypotheses that affect, at least partially, the final result (Whitehouse, 2001).

This section, building on Whitehouse (2001) and adapted to the Italian legislative framework, sets out a simple model to show the impact of different charges.

Participants in a pension fund finance their positions through an annual contribution, equal to  $C$ . Individual contributions to the fund are assumed to grow at a  $g$  rate. Contributions at a given period  $t$  in continuous time can be written as a multiple of contributions in period  $\theta$ , when the individual joins the pension fund:

$$(1) \quad Ce^{gt}$$

The first type of charge considered is one as a proportion of contributions,  $a_1$ . If the fund includes such commissions, the net inflow into the pension fund at time  $t$  net of this charge is

$$(2) \quad C(1 - a_1)e^{gt}$$

This is the amount effectively invested by the fund, which earns an annual investment return equal to  $r$ . However, an annual management charge,  $a_2$ , is typically levied as a proportion of the fund assets. So the net accumulation in the fund at the end of the term (time  $T$ ) from contributions made at time  $t$  is

$$(3) \quad C(1 - a_1)e^{gt} e^{(r-a_2)(T-t)}$$

Integrating (3) from time  $0$ , when the member joins the pension plan, to time  $T$ , when accumulated funds are withdrawn, gives the total fund as

$$(4) \quad C(1 - a_1)e^{(r-a_2)T} \frac{e^{(g+a_2-r)T} - 1}{g + a_2 - r}$$

Any one-off charge, payable up-front ( $a_0$ ) (e.g. entry fee) would have earned an investment return up to pension withdrawal. The pension benefit therefore falls by

$$(5) \quad a_0 e^{(r-a_2)T}$$

for each charge provided<sup>11</sup>.

Any administrative charge paid on a periodic basis ( $a_3$ ) reduces the final accumulation, as this charge is equal to a regular sum that has to be subtracted to the paid contributions and that can not be invested in the market. Integrating this periodic sum from time  $t$ , when it is paid, to time  $T$ , when the fund ends, gives a reduction in the final pension benefit equal to:

$$(6) \quad a_3 \frac{1 - e^{(r-a_2)T}}{a_2 - r}$$

Allowing for all these charges gives the total net accumulation as

$$(7) \quad C(1 - a_1)e^{(r-a_2)T} \frac{e^{(g+a_2-r)T} - 1}{g + a_2 - r} - a_0 e^{(r-a_2)T} - a_3 \frac{1 - e^{(r-a_2)T}}{a_2 - r}$$

To summarise, the equations above give the lifetime pension contributions plus the investment returns they earn minus four different types of charges, typically levied on an Italian open pension fund. These are: a fixed fee, typically paid as one-off payment at the beginning of participation ( $a_0$ ) or for the case of total/partial exit ( $a_4$ ); an annual administrative fee directly charged by the contributor expressed, according to the fund, as levy on contribution ( $a_1$ ) or, alternatively, as a fixed sum ( $a_3$ ); an annual management fee calculated as a percentage of the fund assets ( $a_2$ )<sup>12</sup>. With these elements, we are able

<sup>11</sup> If only the entry fee is included, there will be just one sum to be deducted from the final accumulated amount. If, on the contrary, other fixed fees are included (e.g. exit fees,  $a_4$ ), the sum to be deducted should be repeated more often, one for each one-off fixed fee expected.

<sup>12</sup> The performance fee is not included in the analytical framework, as it is determinable only ex-post according to the level of investment returns compared to the benchmark.

to calculate the final amount accumulated by the contributor at the moment of retirement. Although such a value is sufficient to establish a ranking of convenience between the pension products, it is clear that it does not lend itself to be directly interpreted as a synthetic charge indicators. Two measurements widely accepted in literature are instead proposed to this end:

- the *reduction in yield* (RiY) shows the effect of charges on the effective rate of return, given a set of assumptions about the rate of return of the market, the time profile of contributions and the term of the plan. This broadly measures the difference between an assumed yield and the effective yield, which is defined as the internal rate of return of the pension plan during the accumulation phase (Blake and Board, 2000). In essence, the equation is calculated as it stands, and then solved for a value of  $a_2$ , that gives the same total accumulation assuming that the one-off charge ( $a_0$ ), contribution-related fee ( $a_1$ ) and annual administrative charge ( $a_3$ ) are all zero<sup>13</sup>.
- the *reduction in contributions* (RiC) shows the charge as a proportion of contributions, again for a set of assumptions about investment returns. This measure expresses the loss in value arising from a fund's charges as the difference between the final total amount effectively accumulated by the fund and that would have to be obtained into a hypothetical zero-load plan (Blake and Board, 2000). In analytical terms, all of the other charges are in this case subsumed into  $a_1$  in equation, rather than  $a_2$  as in the RiY case.

The different sensitivity of each measure to various assumptions means that any single measure is misleading<sup>14</sup>. A first preference must be for both measures. If a single measure is needed, the most appropriate choice depends on the type of levies used in practice and their relative importance. If for example most of the cost of a typical policy is due to levies on assets, then the RiY gives the most robust result. Similarly, if charges on contributions are more relevant, then the RiC will be more robust. When comparing funds which rely on different types of charge, as in the Italian case, reliance on a single measure can be misleading and the best approach is to use both indicators.

#### **4. An empirical analysis of Italian open pension fund charges**

We apply the previous formal analysis of charges to Italian open pension funds, attempting to fill an area that is not much covered by literature; most literature on the subject originates from countries that introduced a multipillar system early on or from emerging markets<sup>15</sup>.

Our sample is made up of all the Italian open pension funds operating at the date of January 31st 2009, as derived from the institutional website of Covip<sup>16</sup>; 78 open pension funds are included in the sample, corresponding to 350 investment lines. Each investment line has been categorized according to the Assogestioni's classification. Specifically, there are 55 stock lines, 33 stock balanced, 63 balanced, 124 bond, 39 bond balanced, 23 monetary, 13 flexible. The majority of funds is managed by

---

<sup>13</sup> ISC proposed by Covip for pension funds and Cpma (Costo percentuale medio annuo) provided by Isvap for insurance financial products follow this kind of approach.

<sup>14</sup> See Whitehouse (2001).

<sup>15</sup> Only Fornero, Fugazza and Ponzetto (2003) specifically focus on pension fund charges levied on Italian workers.

<sup>16</sup> We excluded from the sample one open pension fund, that is Fondo Pensione Aperto Regionale TFR, since its charge structure is peculiar, not directly comparable with that of the other funds and, above all, determinable only ex-post, on the basis of the balance sheet.

insurance companies (47 funds) and from asset management companies (16); companies of bancassurance, investment companies and banks follow with 9, 5 and 1 observation respectively. Data about the charge structure has been inferred by each fund's regulations consultable at the relative Internet sites. We collected data about charges relating only to the accumulation phase of the pension, not the payout phase when the accumulated balance may be used to purchase an annuity or be drawn down. Moreover, the simulation performed here of the accumulation phase takes the only contractually pre-established charges into account; this choice, dictated by the limited information available and adopted by the Covip itself, means that all the costs that are levied on the contributors but are not determined until the closing of each exercise on the balance sheet are neglected<sup>17</sup>.

For each investment line, other information has been gathered, inferred by the informative note and the annual report of each fund, updated to the 31st December 2008: presence of a yield guarantee, years of operativeness, number of participants. They are a set of variables which will be useful for the next regressive model.

A descriptive analysis of the Italian open pension fund charge structure is described below; as in Section 2, a distinction is made between administrative charges, paid for the fund administration and financial fees, associated with the investment service provided by each line.

*- Administrative fees*

A descriptive analysis of the administrative charges of Italian open pension funds is reported in Table 2.

**Table 2. Administrative fees: descriptive statistics**

	N. of funds	Mean	Median	Min	Max	S.D.	Asimm	Curtosis
<b>One-off entry fee</b>	64	32,9	25,82	5,00	100,00	17,35	0,93	1,59
<b>Fees directly charged:</b>	55							
- % contributions	4	0,02	0,02	0,005	0,035	0,02	0,00	-1,85
- fixed	51	16,88	15,49	5,00	31,00	6,2	0,49	-0,10
<b>Exit fees:</b>								
- Anticipation	10	20,00	20,00	5,00	30,00	6,67	-0,89	0,91
- Transfer to another fund	53	28,03	25,00	5,00	51,65	14,95	0,61	-0,94
- Redemption	21	24,21	20,00	5,00	51,65	12,68	0,96	0,55

<sup>17</sup> For example, legal costs, stamp duties, supervisory authority commission, trading costs; their exclusion does not seem to significantly affect the results, with the exception of trading costs. Previous studies (see, among others, Blake and Board, 2000) underline the risk of an incentive distortion when the trading activity is committed to a subject belonging to the same group of the management company: the latter could be tempted to increase the number of transactions in order to increase commissions in favour of the former and to the detriment of pension fund participants (the so called "churning"). Nevertheless, this risk does not seem to be relevant with specific reference to Italian pension funds (see Fornero, Fugazza and Ponzetto, 2003).

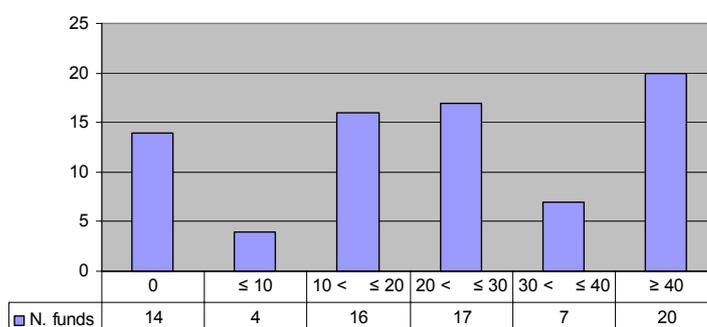
- Individual position reallocation	30	17,08	15,00	5,00	50,00	8,94	1,50	4,20
- Contr. flow reallocation	9	14,86	15,00	5,00	25,82	8,45	-0,05	-1,49

All values refer to pension funds actually applying each kind of charge

Most of the funds included in our sample requires the payment of a one-off entry charge paid upon the adhesion (82%); on the contrary in the case of (total or partial) exit a few share of plans requires the payment of a fee: 13% of the analysed funds requires a cost for allowing an anticipation, 27% requires a fee in the case of redemption and 68% requires a payment when workers transfer their individual accounts to another pension fund. Fewer funds set out the payment of a fee for changes in the investment line: in 30 cases (38%) it is required to reallocate the individual position and only in 9 cases (11%) to reallocate the future contributions flow.

On average the one-off entry charge is equal to 33 euro. The relative distribution has a high dispersion level with respect to the mean value: the standard deviation is equal to 17,35. Moreover, the one-off entry charge distribution appears to be marked by an asymmetry towards right and a platicurtosis. The frequency distribution reported in Figure 1 shows that most of the funds apply an entry charge of between 11 and 40 euro (40 funds). Anyway, funds which levy an expensive entry commission still exist; there are 20 funds that apply a charge higher than 40 euro.

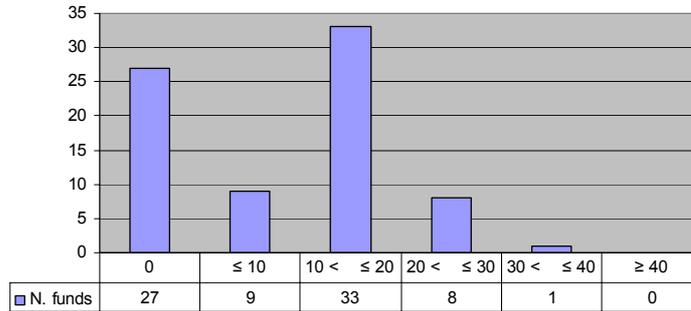
**Figure 1: One-off entry fee: frequency distribution**



The distribution of the one-off entry charge shows that, at least for the entry commission, a convergence towards the “first best” has not been verified, as some funds are still characterized by a high entry fee.

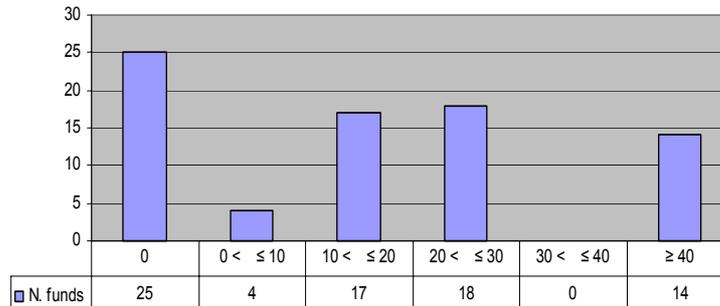
71% of the funds levies fees directly charged by participants on an annual basis. When expected, this charge is generally proportioned in a fixed sum (51 funds); only in a few cases it is proportioned as a percentage of contributions (4 funds). On average, the annual charge directly paid by the contributor is approximately 17 euro in the case of a fixed sum and 2% of the contributions if they are applied in percentage form. The distribution of the fees directly charged by contributors has neither a high dispersion level nor a strong degree of asymmetry. Among funds that apply fixed fees directly charged by the contributor, the amount of the annual fee generally does not exceed 20 euro: only 9 funds provide a charge level higher than this amount (see Figure 2); most of the funds apply a fee of between 10 and 20 euro (33 funds).

**Figure 2: Fees directly charged by participants (fixed sum): frequency distribution**



Costs related to the early (partial or total) exit from the fund are particularly significant in terms of pension fund competition: if they are fixed at a high level, they risk limiting the portability of the personal position, preventing the competition between complementary pension forms<sup>18</sup>. As regards to these costs, charges connected to the transfer to another fund seem to be on average higher than those related to the redemption and to the request for anticipation. Generally, they are between 10 and 30 euro; nevertheless funds actually applying a transfer fee higher than 40 euro still exist (see Figure 3).

**Figure 3: Transfer fee: frequency distribution**



This evidence, combined with the previous one about the one-off entry charge, would seem to confirm the presence of barriers to free exit from the plan and consequently to free competition between pension funds. Nevertheless, the cost of transfer is on average lower than that of entry (see Table 2), suggesting that the incoming and outgoing cost policy of pension fund providers would seem to expecting a higher level of charges at the beginning, making, at the same time, the right of exit before retirement less onerous<sup>19</sup>. The prevision of a high entry fee could also be justified by the strategy of companies to anticipate the cost recovery.

<sup>18</sup> In this sense, see prudential measurements recently arranged by Covip and discussed in Section 2.

<sup>19</sup> An alternative incoming and outgoing policy is to apply a low entry charge and an expensive transfer fee. This is the strategy followed by Italian insurance-based saving schemes. See Mefop (2009).

The level of dispersion is smaller in the case of the anticipation charge and bigger in the case of redemption and transfer. The form of the three distributions is asymmetrical: on the right for transfer and redemption, on the left in the anticipation case.

As regards charges applied to the reallocation intra-fund, the transfer of an individual position to another investment line turns out to be on average more expensive than the reallocation of the new contributions flow. The distribution of these charges has a low variability level and a variable degree of asymmetry, higher and to the right for the individual position reallocation, slightly on the left in the other case.

#### - *Financial fees*

The descriptive analysis of financial fees provided by Italian open pension funds has been carried out on the investment line level, as each fund applies different fees according to the investment policy. Table 3 synthetically shows data about the first kind of financial fee (management fee) referred to the whole sample.

**Table 3: Management fee: descriptive statistics**

Investment line	Mean	Median	Min	Max	S.D.	Asimmetry	Curtosis
<b>Overall sample</b>	0,0112	0,011	0,0010	0,0222	0,0036	0,288	0,0130
<b>Stock</b>	0,0144	0,015	0,0065	0,0222	0,0036	-0,2352	-0,4081
<b>Stock balanced</b>	0,0131	0,013	0,0070	0,0200	0,0032	0,1233	-0,7398
<b>Balanced</b>	0,0118	0,012	0,0050	0,0174	0,0027	-0,5208	-0,2807
<b>Bond balanced</b>	0,012	0,012	0,0050	0,0220	0,0034	0,6599	0,9847
<b>Bond</b>	0,0096	0,009	0,0040	0,0185	0,0026	0,5273	0,7735
<b>Monetary</b>	0,0075	0,0075	0,004	0,0125	0,0023	0,6074	-0,1102
<b>Flexible</b>	0,0080	0,0086	0,0010	0,0140	0,0042	-0,3093	-0,9296

Our data highlights that the level of management fees reflects the risk-return profile of the underlying investment line: on average the management fee is positively correlated to the riskiness of the chosen investment class.

The management fee distribution does not appear to be affected either by a high degree of asymmetry or a significant level of dispersion; however, the latter tends to grow as the investment riskiness increases, with the exception of flexible investment lines.

Up to the end of 2008, 6 open pension funds have introduced a performance fee, for a total of 17 investment lines: 12 of them apply a performance fee where the parameter used for calculating the over-performance is the benchmark; in the other cases, the assumed reference point is the revaluation rate of TFR<sup>20</sup>. When the performance fee is introduced for several investment lines, sometimes it is applied with different per cent rates.

#### - *Reduction in Yield and Reduction in Contribution*

For each investment line included in our sample the RiY and RiC have been calculated, considering three time horizons (5, 10, 35 years). RiY and RiC values reported in this section have been calculated including the one-off entry fee, fees directly charged by participants and the management fee<sup>21</sup>. The baseline assumptions are that:

<sup>20</sup> The so called “Trattamento di Fine Rapporto” (TFR) is a sum accumulated yearly by the employer and paid to the worker when he leaves the firm because of retirement or transferral to another occupation.

<sup>21</sup> In a second step of the analysis we have run the calculation of each indicator including also the exit fees, supposing that each prerogative would have been exercised after 5 or 10 years. Nevertheless, the

- individual annual contributions are equal to 2.500 euros<sup>22</sup>; contributions are supposed to be paid in a single solution at the beginning of each year;
  - individual contributions grow by 1 per cent a year, in order to consider the real revaluation of contributions<sup>23</sup>;
  - annual investment returns are supposed to be 4 per cent<sup>24</sup> a year;
  - pension plan has a 35-year term.
- Summery data referred to the whole sample are shown in the Table below.

**Table 4: RiY and RiC: descriptive statistics (overall sample)**

Charge measurement	Mean	Median	Min	Max	S.D.	Asimmetry	Curtosis
<b>RiY (5 years)</b>	0,0138	0,0137	0,0023	0,0286	0,0043	0,3532	0,2494
<b>RiC (5 years)</b>	0,0344	0,0342	0,006	0,0699	0,0105	0,3024	0,1724
<b>RiY (10 years)</b>	0,0123	0,0122	0,0014	0,0249	0,0038	0,2899	0,1425
<b>RiC (10 years)</b>	0,0615	0,0615	0,0071	0,1203	0,0185	0,2105	0,0855
<b>RiY (35 years)</b>	0,0114	0,0113	0,001	0,0226	0,0037	0,2754	0,0234
<b>RiC (35 years)</b>	0,2008	0,202	0,021	0,355	0,0563	0,0148	-0,0503

In general, the ranking of investment lines using RiY and the one deriving from the use of RiC are coincident. This evidence is also confirmed by the correlation coefficient between two indicators equal to 0,9984. There are times when the position in the ranking of one investment line using RiY and the one obtained applying RiC are not the same; however, it seems to be due to the approximation used for calculating RiY, which does not allow adequate discrimination between investment lines. Alternately, more decimal digits could be considered for this indicator, but then one may query the usefulness of such an indicator that should be synthetic and effective.

Comparing the distribution of the two indicators (RiY, RiC), we find that distribution form has a low asymmetry and dispersion level relative to the mean value for each time horizon (5, 10, 35 years). The frequency distribution confirms this evidence: even if the range between the maximum and the minimum level is not negligible, there is an overall convergence towards the middle value, where most of the investment lines are concentrated (see Figure 4, 5, 6).

---

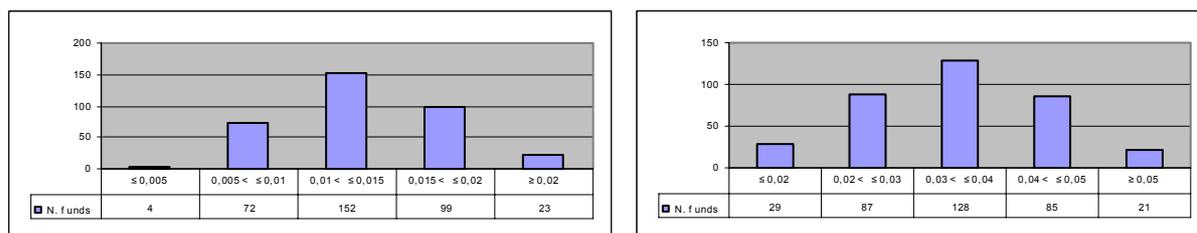
final measure does not change significantly, so we omitted the relative value for brevity. Data is provided on request.

<sup>22</sup> This hypothesis is used as a first general application, in order to follow the approach suggested by Covip for calculating the ISC.

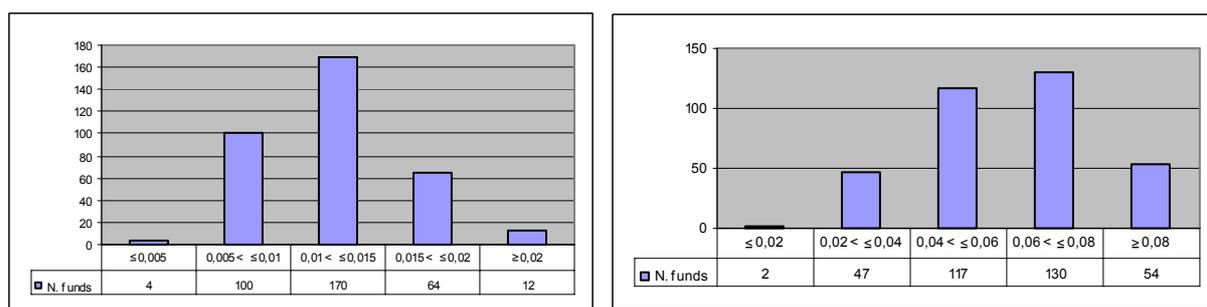
<sup>23</sup> On the contrary, Covip does not consider the annual revaluation of contributions.

<sup>24</sup> As the focus of the present study is analysing the overall costs charged by participants in Italian open pension funds, it is out of our scope to formulate complex and inevitably debatable hypothesis about future expected returns and their variability; on the contrary, we preferred to fix, as a first general application, a common scenario for all the investment lines, following the approach suggested by Covip for calculating the ISC. The sensitivity analysis developed by Fornero, Fugazza and Ponzetto (2003) shows that different levels of expected returns do not seem to substantially influence the results.

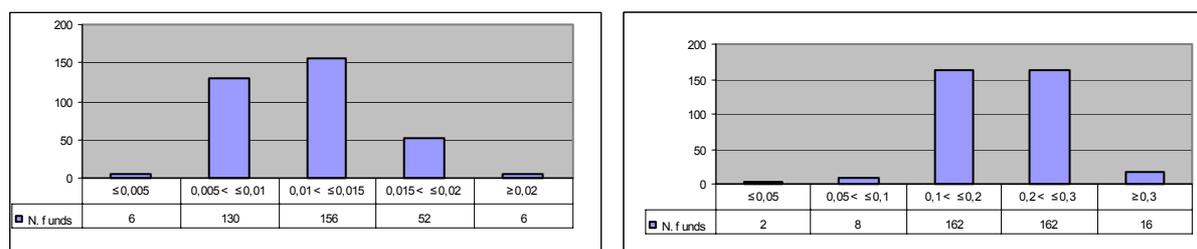
**Figure 4: RiY and RiC (5 years) : frequency distribution**



**Figure 5: RiY and RiC (10 years) : frequency distribution**



**Figure 6: RiY and RiC (35 years) : frequency distribution**



It is interesting to use a few examples from our sample to draw some considerations about the sensitivity of each indicator to different forms of charges, their reactivity to the same change in the charge level and their development in time. The main suggestions emerging from the comparison between RiY and RiC can be summarized as follows:

- *sensitivity to changes in administrative charges*: for longer time horizons, RiY, having a lower dimensional scale, it is less clear than RiC in showing the increases in administrative commissions being paid to them once and for all or periodically. A numeric example could turn out to be useful. The BIM Vita Bond Line fund applies only a management fee equal to 1% of assets; charge indicators for a 35 year horizon are respectively equal to 1% (RiY) and to 18,1% (RiC). The Apulia Balanced fund, besides the management fee of 1% of assets, additionally asks a one-off entry charge equal to 30 euro; indicators change as follows: RiY remains equal to 1% , while the RiC becomes equal to 18,2%. Finally, the fund Gestielle Pensione & Previdenza Balanced Value, in addition to the above mentioned charges, levies an annual administrative charge of 13 euro: RiY becomes 1,03% while RiC rises to 18,5%. As derived from the

example above, when we use the RiY for a longer time horizon we are not able to comprehend the major onerousness of Apulia with respect to Bim Vita using only two decimal digits; with this aim, we should consider four decimal digits, to the detriment of the immediacy and concision of the information contained in the indicator;

- *sensitivity to changes in management fees*: for both measures, the kind of cost that affects most the final indicator is the management fee. However, for construction RiY turns out to be much more sensitive to increases in the management fees than RiC; RiC signals the increase in the management fees, but the change in the level of the indicator is less emphasized. For example, the fund LA Previdenza has four investment lines, with management fees equal to 1,6%, 1,4%, 1,2% and 1% of assets; the progressive percentage reduction undergone by RiY for a 35 year time frame is higher than the one expressed by RiC (when management fees pass from 1,6% to 1%, RiY has a 37% reduction, while the RiC decreases by 32%);

- *development in time*: as derived from Table 4, RiY decreases over time, as the incidence of fixed and contribution-related costs tends to decrease when the total amount grows; on the contrary, RiC grows over time. This evidence suggests that RiY could produce a misleading piece of information for pension plan participants; in fact, if measured in real monetary terms, progression of the accumulation plan involves the continued increase in the charges borne by participants in absolute value as a consequence of the composition effect (see Mefop, 2009). So, there is the risk that the message carried by RiY could not be interpreted correctly, above all from those subjects with a lower level of financial knowledge.

For a complete analysis, we also report descriptive statistics of charge indicators on an investment category basis.

**Table 5: RiY and RiC: descriptive statistics (investment categories)**

Charge measurement (35 years)	Mean	Median	Min	Max	D.S.	Asimmetry	Curtosis
RiY_stock	0,0146	0,015	0,0065	0,0226	0,0037	-0,2368	-0,3830
RiC_stock	0,2488	0,257	0,124	0,355	0,0536	-0,4441	-0,2870
RiY_stock_balanced	0,0134	0,0137	0,007	0,0204	0,0033	0,069	-0,7087
RiC_stock_balanced	0,02317	0,2380	0,132	0,328	0,0485	-0,0878	-0,7543
RiY_balanced	0,0121	0,0123	0,0052	0,0178	0,0028	-0,51	-0,3263
RiC_balanced	0,212	0,217	0,099	0,295	0,0435	-0,6509	-0,1674
RiY_bond_balanced	0,0123	0,012	0,0053	0,0225	0,0034	0,6378	0,9796
RiC_bond_balanced	0,2147	0,213	0,101	0,353	0,0507	0,3185	0,4829
RiY_bond	0,0098	0,0094	0,004	0,0186	0,0026	0,5247	0,8650
RiC_bond	0,1770	0,1725	0,079	0,305	0,0409	0,2919	0,3632
RiY_flexible	0,0085	0,0088	0,001	0,0143	0,0046	-0,3728	-1,072
RiC_flexible	0,1532	0,162	0,021	0,246	0,0779	-0,5008	-0,9426
RiY_monetary	0,0077	0,0078	0,004	0,0125	0,0023	0,5118	-0,2947
RiC_monetary	0,1432	0,145	0,078	0,221	0,038	0,4051	-0,3948

As highlighted in Table 5, the distribution of RiY and RiC do not seem to be especially affected by the specific investment line category: they continue to show a low level of

dispersion and asymmetry. Nevertheless dispersion tends to be higher in the investment lines with a riskier asset allocation, with the exception of flexible lines.

### **5. Multivariate analysis: charges and performance of Italian open pension funds**

The analysis carried out in the previous section takes only the charge profile of those participating in a pension plan into consideration. An accurate cost analysis developed from the pension holder's perspective can not disregard a comparison between the charge profile experienced by participants and the quality of the service received. In this sense, a higher cost could be associated with a careful asset management and with a higher performance, which justifies higher management fees. So, it seems useful to investigate the connection between costs and performance of Italian open pension funds. While little is known about the correlation of costs and performance in the pension fund industry, there is a lot of literature that addresses costs and performance of mutual funds. These studies of mutual funds have generally found that higher costs are not related to superior performance (e.g. Jensen, 1968; Malkiel, 1995; Malhotra and McLeod, 1997; Braga and Cucurachi, 2000). Empirical analyses specifically focussed on Italian mutual funds suggest that the extra-returns reached by mutual funds are cancelled by the level of the commissions charged to the savers (Cesari and Panetta, 2002).

Our analysis is based on a subsample of all Italian open pension funds, made up of 56 pension plans offering 219 investment lines, for which we were able to collect reliable data about the 5 year risk-adjusted performance<sup>25</sup>.

The regression model used in our analysis can be analytically expressed as follows:

$$y_i = x_i \beta + \varepsilon_i \quad i = 1, 2, \dots, N$$

where  $y_i$  is the dependent variable,  $x_i$  is the  $1 \times M$  vector of exogenous variables,  $\beta$  is a  $M$ -dimensional vector of unknown parameters and  $\varepsilon_i$  is a random error term.

Our model uses as dependent variable ( $y_i$ ) the charge measure of each investment line calculated above (RiY and RiC). Independent variables  $x_i$  used in the regression model to study the main determinants of pension funds' charge level can be grouped into four categories:

- *investment risk explanatory variables*: this group of variables allows us to take the different risk profile of each investment class into consideration, as a proxy of the investment category each line belongs to; as measure of risk, we consider the 5 year standard volatility and 5 year negative volatility<sup>26</sup>;
- *risk adjusted performance explanatory variables*: in order to consider the effective results reached by each investment line, we use relatively standard risk-adjusted measures of performance for a 5 year time horizon<sup>27</sup>; in particular we use the 5 year Sharpe Ratio, that measures the excess return (or risk premium) per unit of risk in an

---

<sup>25</sup> Data about the 5 year risk-adjusted performance and riskiness of each investment line are derived from Borsa Italiana. No open pension fund is actually listed in one of the markets managed by Borsa Italiana; nevertheless, Borsa Italiana reports their performance data, provided by Bluerating, for information purposes.

<sup>26</sup> Even if a pension fund has a longer time profile, 5 years is the widest time horizon available for risk indicators used in the analysis.

<sup>27</sup> See note 26 for comments about the time horizon of indicators used.

investment strategy, and the 5 year Sortino Ratio, that measures the excess return per unit of downside risk;

- *structural explanatory variables*: this category is made up of variables related to some structural features of each investment line, which could affect the level of charges; these variables are the presence of a return/capital refund guarantee eventually provided by the line and the years of operativeness; the first one has a qualitative nature, so we treat this variable as a dummy;

- *pension fund company explanatory variables*: we consider the name of the company managing the fund, in order to see if there are significant differences in the price strategy systematically affecting the charge level; since the company name has a qualitative nature, we treat it as a dummy.

All results for  $y_i = RiY, RiC$  are provided in Table 6, while Table 7 contains some regression statistics; some explanatory variables among those presented above are dropped to avoid collinearity.

**Table 6: Model estimation**

<i>dependent variable: RiY</i>					<i>dependent variable: RiC</i>			
variable	coeff.	s.e.	t-stat	p-value	coeff.	s.e.	t-stat	p-value
Constant	0,005	0,0019	2,678	0,0081***	0,1016	0,0289	3,513	0,0006***
<b>Investment risk explanatory variables</b>								
Stan_vol	0,0010	0,0004	2,239	0,0264**	0,0146	0,0064	2,267	0,0246**
Neg_vol	-0,0005	0,0005	-0,878	0,3811	-0,0071	0,0079	-0,897	0,3710
<b>Risk-adjusted performance explanatory variables</b>								
5 Sharpe	-0,0010	0,0004	-2,443	0,0155**	-0,0153	0,0062	-2,478	0,0142**
5 Sortino	7,61E-0,5	1,98E-0,5	3,835	0,0002***	0,0013	0,0003	3,942	0,0001***
<b>Structural explanatory variables</b>								
Guarantee	0,0008	0,0005	1,701	0,0907*	0,0124	0,0077	1,606	0,1102
Years	0,0004	0,0001	3,054	0,0026***	0,0059	0,0019	3,053	0,0026***
<b>Pension fund company explanatory variables</b>								
Gestielle	-0,0023	0,0013	-1,802	0,0732*	-0,0349	0,0196	-1,782	0,0766*
Allenza	0,0020	0,0015	1,344	0,1808	0,0313	0,0216	1,448	0,1493
Allianz	-0,0015	0,0015	-1,051	0,2949	-0,0222	0,0220	-1,006	0,3156
Arca	-0,0042	0,0015	-2,751	0,0066***	-0,0625	0,0226	-2,770	0,0062***
Aureo	-0,0016	0,0014	-1,194	0,2342	-0,0246	0,0210	-1,170	0,2436
Azimut	0,0034	0,0019	1,741	0,0835*	0,0510	0,0277	1,840	0,0675*
Bipiemme	-0,0005	0,0013	-0,436	0,6631	-0,0067	0,0189	-0,358	0,7212
Credem	0,0002	0,0013	0,156	0,8763	0,0066	0,0187	0,352	0,7253
Caam	-0,0057	0,0013	-4,471	0,0000***	-0,0907	0,0184	-4,937	0,0000***
Fondiaria	0,0010	0,0013	0,778	0,4375	0,0182	0,0195	0,932	0,3526
Intesa	-0,0019	0,0013	-1,509	0,1330	-0,0281	0,0188	-1,490	0,1379
Pioneer	-0,0022	0,0015	-1,425	0,1558	-0,0330	0,0237	-1,392	0,1657
Sella	-0,0022	0,0015	-1,468	0,1440	-0,0312	0,0227	-1,371	0,1722
Ugf	-0,0019	0,0013	-1,447	0,1498	-0,0275	0,0201	-1,365	0,1739
Aig	0,0032	0,0014	2,227	0,0273**	0,0491	0,0212	2,316	0,0218**
Ag	-0,0006	0,0018	-0,333	0,7393	-0,0076	0,0270	-0,281	0,7793
Aurora	-0,0005	0,0014	-0,389	0,698	-0,0058	0,0208	-0,279	0,7808
Axa_Mps	-0,0022	0,0015	-1,483	0,1399	-0,0330	0,0227	-1,454	0,1478
Banca Crfi	-0,0017	0,0013	-1,326	0,1867	-0,0239	0,0191	-1,256	0,2109
Bim Vita	-0,0029	0,0015	1,968	0,0506*	0,04560	0,0218	2,095	0,0376**
Cardif	-0,0010	0,0020	-0,530	0,5965	-0,0120	0,0291	-0,413	0,6800
Credit agr	0,0012	0,0014	0,88	0,3798	0,0217	0,0204	1,062	0,2897
Creditras	0,0005	0,0013	0,363	0,7170	0,0102	0,01898	0,538	0,5913
Groupama	0,0026	0,0012	2,129	0,0347**	0,0412	0,0177	2,327	0,0212**

Hdi	0,0038	0,0019	2,068	0,0402**	0,0596	0,0277	2,150	0,0329**
Helvetia	0,0076	0,0015	4,947	0,0000***	0,1085	0,0235	4,616	0,0000***
Itas Vita	0,0012	0,0017	0,742	0,4591	0,0203	0,0250	0,811	0,4182
Med_vita	0,0050	0,0012	4,167	0,0001***	0,0727	0,0179	4,055	0,0001***
Nat_suisse	0,0044	0,0017	2,613	0,0098***	0,0679	0,0244	2,786	0,0059***
Nuova_tirr	0,0037	0,0016	2,364	0,0192**	0,0561	0,0229	2,451	0,0153**
Pop_vita	-0,0002	0,0013	-0,129	0,8977	0,0011	0,0194	0,057	0,9548
Sara	0,0028	0,0019	1,457	0,147	0,0437	0,0277	1,578	0,1163
Reale_mutua	-0,0061	0,0017	-3,563	0,0005***	-0,0944	0,0255	-3,707	0,0003***
Toro_ass	0,0029	0,0014	2,034	0,0434**	0,0456	0,0209	2,178	0,0308**
Uniqa	0,0029	0,0015	1,838	0,0678*	0,0440	0,0227	1,940	0,0540*
Vittoria	0,0007	0,0016	0,477	0,6340	0,0129	0,0229	0,562	0,5745
Zurich_inv	0,0011	0,0013	0,847	0,3983	0,0208	0,0199	1,048	0,2962
Zurich_life	0,0035	0,0019	1,850	0,0660*	0,0490	0,0266	1,842	0,0672*
Med_gest	-0,0035	0,0014	-2,468	0,0145**	-0,0517	0,0204	-2,530	0,0123**

**Table 7: Regression statistics**

	<i>dependent variable: RiY</i>	<i>dependent variable: RiC</i>
Mean of dep. variable	0,0116	0,2046
S.D. of dep.variable	0,0038	0,0582
Error sum of squares	0,0009	0,2193
S.E. of residuals	0,0023	0,0356
R <sup>2</sup>	0,7070	0,7026
Adjusted R <sup>2</sup>	0,6307	0,6252
F Statistic	81,5285 (p-value < 0,00001)	97,5523 (p-value < 0,00001)
Log-likelihood	1043,01	445,505
Akaike Information Criterion	-1994,02	-799,009
Bayesian Information Criterion	-1838,12	-643,112
Hannan-Quinn Information Criterion	-1931,05	-736,047

The estimates appear to be rather reliable, since R<sup>2</sup> and adjusted R<sup>2</sup> determination coefficients are higher than 0,50 in both models. The model has been estimated taking heteroschedasticity into account and results are robust with respect to this control.

The first emerging aspect is that the estimates are quite similar for the RiY and for the RiC; so comments to our estimates are almost the same considering one dependent variable or another. This evidence is coherent with the high degree of correlation between the two indicators presented above.

Our estimation highlights that among variables related to the risk exposure of each investment line, only the standard volatility is significant, with a positive sign; this evidence suggests that investment policies keep on representing one of the components best explaining fee differences between lines: on average, higher commissions are levied on riskier investment lines. This is also confirmed by the previous descriptive analysis, where stock lines turn out to be on average the most expensive<sup>28</sup>.

Explanatory variables related to the pension fund performance have a relevant impact upon the level of cost. In particular, the 5 years Sharpe ratio has a significant and negative coefficient, suggesting that the relation between cost and risk-adjusted

<sup>28</sup> To be rigorous there is a company (Reale Mutua) that has started proposing a pension fund (Teseo) in which all the investment lines have the same commission level.

performance is negative: funds with worse performances are also those with higher costs, and vice versa, the least expensive funds reach on average higher performances. In other terms, there are funds which are cheap and more efficient and others that are more expensive and less efficient. As regards the Sortino ratio, the relative coefficient is significant and positive, suggesting that funds which have carried out a portfolio immunization strategy are more expensive; this means that the portfolio protection has a cost for participants. Combining this result with the one obtained for the Sharpe ratio, we might conclude that more prudential management policies, that is policies which have been able to contain the downside risk, have a cost for the supporters, but then they do not seem to give a return in terms of total performance.

Also explanatory variables regarding some structural features of the investment line are relevant: the presence of a return/capital refund guarantee is significant in the RiY model, while it has a more feeble effect in the RiC regression. The sign of the coefficient is positive, suggesting that also the presence of a guarantee is an element which seems to have a positive influence on the total cost of participation: on average the costs of lines providing a result guarantee appear slightly more expensive compared to investment divisions with similar investment features, but without a guarantee; nevertheless, in the last years a general decrease in the costs of warranted lines is registered (see Covip, 2007). The second structural feature of the line regards the years of effectiveness; such an independent variable turns out to be significant and surprisingly with a positive coefficient, suggesting that long lasting investment lines are also those that are more expensive. It does not seem to be proved, at least for Italian open pension funds, that increasing over time and in asset under management could facilitate the achievement of scale economies and cost reduction by pension fund providers.

Finally, variables also related to the pension fund company seem to be relevant, with different signs depending on the company. This suggests that companies follow different pricing strategies, whilst still remaining intermediaries that offer an expensive service for each kind of investment proposed. This evidence also suggests further investigation into the role of pension fund providers is required, for example clustering the main figures of Italian providers, in order to see if there are some dimensional, efficiency and structural characteristics of the company that systematically affect the level of costs.

A related issue regards the consistency between the actual participation choices made by contributors and the evidence suggested above; in particular, it would be interesting to investigate if funds with more participants are actually those that are more economic and better performing. Up to now, available data does not allow us to carry out such a careful empirical analysis, since only a few funds have published the 2008 annual report where the number of participants in each investment line is reported<sup>29</sup>. Moreover, even if all the data were available, we would be able to depict just a punctual situation at the end of 2008; on the contrary, in order to analyse what determines the actual participation rate in each plan a diachronic analysis would be more useful, allowing a study of the evolution in time of the participation rate and also to take structural and legislative changes into account. Therefore, further investigations are needed. In this

---

<sup>29</sup> Only 26 funds have approved and published their 2008 annual report, even if it had to be approved before the 31th March. Also Covip does not provide any data, since its annual relation will be made public on June.

paper, we just provide some preliminary descriptive considerations in order to give useful insights about the possible relationship between the participation choices expressed by contributors and some of the variables used in the previous regression model. To such an end, we report the coefficient of correlation between the number of participants in each investment line at the end of 2008 and the variables used in the regression, for which we want to study the link with the adhesion rate.

**Table 8: coefficients of correlation between the number of participants and some explanatory variables** (n. obs: 150)

	Stan_vol	5Sharpe	5Sortino	Guarantee	Years	RiY35	RiC35
<b>N. participants</b>	0,1140	0,0754	0,0931	-0,0820	0,1619	0,0244	0,0304

Correlation coefficients of factors potentially influencing the number of contributors in each investment line are almost near zero. The highest values are found for the years of operativeness and for the standard volatility, suggesting that, as obvious, the number of contributors increases as the operativeness of the line grows longer; secondly, this evidence also suggest that most participants in open pension funds have chosen a riskier asset allocation. This preference for riskier lines could be justified by the long time participation to a pension fund, but also by managers' distributive policy<sup>30</sup>. Other variables do not seem to be correlated with the number of participants, suggesting that drivers of participation have to be found elsewhere, not just in a cost/performance model.

## 6. Some preliminary conclusions and further work

The work has primarily focused on collecting and analysing the available data to assess the cost of Italian individual open pension funds from the pension holder's perspective; additionally, it has undertaken some preliminary evaluations about the possible relationship between costs and risk-adjusted performance of open pension plans. While estimates can not be treated as definitive, they provide some insights into the cost of running open pension plans in Italy and into the efficiency of the service provided to participants. The main tentative conclusions from this work can be summarised as follows.

From the descriptive analysis of pension fund commissions, we have found that the one-off entry charge is more frequent and higher than other administrative costs (fees directly charged by participants and exit fees). The high initial commission seems to accomplish a function of stimulus for the sale agents, which draws most of their remuneration from it, but also a function of front-loading (cost anticipation) for the fund, in order to dissuade the interruption of the plan participation. Among financial commissions, the management fee is the one that has the most relevant economic impact; so, if funds really want to render the service more affordable to participants they should reduce management fees, that have the biggest influence upon the final cost. Analysing the distribution of administrative and financial fees we have also found that

<sup>30</sup> For example, in closed pension funds, most participants have opted for less riskier lines. See Mefop, 2009.

forms characterized by high charges still subsist, suggesting that the level of fee competition among providers seems to be not so significant.

From the calculation of two synthetic charge measures proposed in literature on our sample (RiY and RiC), we have found that the information content of two indicators are almost the same. Nevertheless, while the RiY is a mathematically well-defined measure of the fund charge and it is the conventional approach also used in the Italian context, few retail customers appear to understand it; the principal difficulty with the RiY approach is that it can be difficult to explain to non specialists. Moreover, we have found that in our sample the value of RiY and RiC tend to be very tightly clustered around the average; this means that fee competition among funds have led to a convergence “towards the middle”, rather than “towards the best”, confirming a low level of fee competition in the pension fund offer side.

From the empirical analysis we try to investigate if there is a possible link between fees and performance in pension funds, in other terms if differences in charges could be explained by differences in pension fund performances. Our results suggest that higher costs of some pension funds do not seem to be justified by a more efficient asset management: funds that have shown on average a lower 5 year Sharpe ratio are also the more expensive. Investors pay some sums for performances that actually do not receive or are even penalized by these onerous services. Surprisingly, older funds are more expensive, suggesting that Italian open pension funds have not been able to reach scale economies or, alternatively, to convert these scale economies in benefits for participants.

We also try to investigate if there is a possible relationship between the adhesion rate in each fund and its cost/performance profile. Nevertheless, the availability of adequate data has been an important limitation for conducting this analysis. Actually, we are just able to give some preliminary insights about the possible correlation between the number of participants in each investment line and the variables explaining the cost, the risk, the risk-adjusted performance and some structural characteristics of the line. The absence of significant correlation suggests that drivers of participation have to be found elsewhere, not just in a cost/performance model.

The current on going works include: (1) clustering the main strategic figures of Italian pension fund providers, in order to widen the cross-section analysis on charges and performance and include specific variables able to catch the structural characteristics, the dimension, the efficiency of the company providing the fund; (2) developing further indicators able to distinguish between administrative and financial fees, as each kind of charge is associated with different kinds of service; (3) checking for longer time horizon performance measures, in order to adapt the performance analysis to the typical time profile of a pension fund.

## References

- Bateman, H. and Mitchell, O.S., “*New evidence on pension plan design and administrative expenses: the Australian experience*”, Journal of Pension Economics and Finance, 2004 (3).
- Blake, D., and Board, J., “*Measuring value added in the pension industry*”, The Geneva Papers on Risk and Insurance, 2000, 25 (4).
- Braga, M.D. and Cucurachi, P.A., “*Le commissioni di incentivo: profili gestionali e organizzativi*”, Ricerca Newfin, Milano, 2000.
- Cesari, R. and Panetta, F., “*The performance of Italian equity funds*”, Journal of Banking and Finance, 2002 (26).
- Cesari, R., Grande G. and Panetta, F., “*La previdenza complementare in Italia: caratteristiche, sviluppo e opportunità per i lavoratori*”, Quaderni di Economia e Finanza, Banca d'Italia, 2007 (8).
- Chlon-Dominczak, A., “*Pension reform and public information in Poland*”, Journal of Social Science Studies, 2000.
- COVIP, “*Relazione annuale*”, 2007.
- Dobronogov, A. and Murthi, M., “*Administrative fees and costs of mandatory private pensions in transition economies*”, Journal of Pension Economics and Finance, 2005 (4).
- Fornero, E., Fugazza, C. and Ponzetto, G., “*Analisi comparativa dell'onerosità dei prodotti previdenziali individuali*”, CeRP, 2003 (6).
- James, E., Smalhout, J. And Vittas, D., “*Administrative costs and the organization of individual retirement account system: a comparative perspective*”, Working Paper, World Bank, Washington DC, 2005.
- Jensen, M.C., “*The performance of mutual funds in the period 1945-1964*”, The Journal of Finance, 1968 (23).
- Kopcke, R., Vitagliano, F. and Muldoon, D., “*The structure of 401(k) fees*”, Center for Retirement Research at Boston College, 2009 (9-3).
- Malhotra, D.K. and Mcleod, R.W., “*An empirical analysis of mutual fund expenses*”, The Journal of Financial Research, 1997 (20).
- Malkiel, B.G., “*Returns from investing in equity mutual funds 1971 to 1991*”, The Journal of Finance, 1995 (50).
- Martinez, C. and Sahm, C., “*Knowledge and retirement saving with personal accounts in Chile*”, Working Paper, 2005.
- Mefop, “*I costi nel sistema di previdenza complementare in Italia*”, Midterm Report, 2009 (1).
- OECD, “*Improving financial education and awareness on insurance and private pensions*”, 2008.
- Tapia, W. And Yermo, J., “*Fees in individual account pension systems: a cross-country comparison*”, OECD Working Paper on Insurance and Private Pensions, 2008 (27).
- Whitehouse, E., “*Administrative charges for funded pensions: comparison and assessment of 13 countries*”, Private Pension System: Administrative Costs and Reforms, Private Pensions Series, Paris, OECD, 2001 (2).