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A COMPARATIVE ANALYSIS OF THE COSTS OF ITALIAN INDIVIDUAL PENSION PLANS

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Abstract[♦]

This paper analyzes the costs of third-pillar individual pension plans currently available in Italy, namely pension insurance policies and open pension funds, which are new products in the Italian savings market. For lack of data on annuities, the analysis is limited to the accumulation phase. To evaluate costs, we use different simulation scenarios, changing the length of the contribution period and the gross returns attainable on financial markets; we also consider participants with different life income and contribution profiles. Following international literature, we present cost measures which reflect the reduction in both the final accumulated pension wealth and the annual rate of return.

The main result of our analysis is the existence of a substantial dichotomy in the market. On one side, open pension funds have moderate costs, close to those of voluntary pension plans in other countries and also to those of the Italian occupational pension funds (i.e. the second pillar). On the other, individual insurance policies are burdened by significantly higher charges. We consider different possible rationales for these costs, including the fact that the market is at a very early stage of development, without reaching a completely satisfactory explanation.

Finally, we also study the possible regressive feature of the fee structure and the unfavourable treatment of early withdrawals of private pension assets; we conclude that both are indeed present in the majority of products, but that their impact is fairly limited.

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Executive Summary

Aims

The years 2001 and 2002 witnessed the launch of supplementary private personal pensions in Italy. These products have been disciplined by a sequence of legislative interventions culminating with the Legislative Decree n. 47 of February 18th, 2000. The following two years may thus be considered a significant test of the products currently offered in the developing Italian private pension market. The take-off of private pensions has been slow and problematic and has widely been judged unsatisfactory. Within the current discussion as to the scope for creating a level playing field for the various providers, it seems helpful to evaluate the intrinsic cost-effectiveness of Italian individual pension plans, disregarding the exogenous statutory constraints imposed to their structure, as well as their contribution and withdrawal mechanisms .

The present work contains an analysis of the costs incurred, during the accumulation phase, in the different individual pension products, namely open pension funds and pension insurance policies (the latter usually referred to by the acronym PIP); in particular, we consider the reduction in the accumulated capital available at retirement, or similarly the reduction in the rate of return attained until that moment, due to the fee structure, also taking into account the annual taxation of financial gains. We do not consider annuitization and the fruition of the private pension: these can indeed be interpreted as the distinguishing characteristics of pension savings, and they are cornerstones of the structure of fiscal incentives, but to this day they do not seem to be a relevant area of competition among different market operators.

Methodological framework

The *sample of products* we analyze includes the largest Italian open pension funds and 25 insurance contracts, covering in both cases more than two thirds of the market (see list in the appendix).

The structure of charges applied to the different products is often quite complicated, in particular for life insurance policies. As a consequence, the calculation of a summary, comprehensive *cost measure* requires the simulation of the individual participation to the pension plan from the first contribution to retirement, or else until the moment of complete withdrawal or transfer.

Since the object of our analysis are the *explicitly predetermined costs* of each plan , we do not consider some cost items that are only measured *ex post*, such as trading charges on directly held assets or the cost of periodical publication of share values. Moreover, we do not take into account the possibility of systematic differences in the results attained by different managers and do not carry out complex and unavoidably questionable forecasts of the returns prevailing on financial markets, but fix instead three simple alternative *scenarios*, with different time horizons and different returns (held constant in each scenario). More precisely, considering a fixed retirement age of 65 years, we analyze the cases of:

- a 50-year-old participant choosing to invest in a “bond” portfolio with a 5% annual nominal return;
- a 40-year-old participant choosing a “balanced” portfolio with a 7% return;
- a 30-year-old participant choosing an “equity” portfolio with a 9% return.

In each case, we assume a 2% annual *inflation rate* and update every three years all nominal values.

In our first simulation, we set the *annual contribution*, split in quarterly instalments, to be constant in real terms and initially equal to €1,000 (corresponding to the average value reported by COVIP, the Italian Supervisory Authority, for 2001). We then consider realistic variable contribution histories based on CeRP estimates of the income profiles of Italian workers. Finally, we consider the case of payments equal each year to the highest limit of fiscal deductibility.

Omitting, as we do, the volatility of financial returns makes the *minimum-return guarantees* offered by some investment lines worthless, which is an issue as far as *with-profits annuities* are concerned, given the guarantee they offer on returns on a yearly basis. However unrealistic our simplification can be, we don't think it would have been preferable to exclude from our analysis the products offering some kind of financial guarantees, since these are usually of limited scope, invariably offered on conservative investment lines and do not seem to correspond to a distinct increase in charges.

The case of a supplementary guaranteed death benefit (typically term life insurance) often bundled with pension insurance policies is different. Even if this is not usually considered an important element of competitive advantage by the insurers themselves, it represents a product feature that is clearly outside the purely financial domain we are considering. We thus remove the cost of this additional insurance from our calculation, by estimating it in the contracts where it is not explicitly indicated. With these assumptions, we compute:

i) the theoretical *redemption value* of the individual pension position in each quarter, up to the *final amount* at the end of the accumulation phase;

ii) the percentage reduction with respect to the amount attainable with a hypothetical costless investment (known as the *charge ratio*); and

iii) the reduction in the market rate of return (known as the *reduction in yield*).

Due to the special tax features of the Italian system, however, the cost measures so obtained cannot be wholly attributed to management charges, because they also include the *tax levy on financial returns*. To disentangle the two components we further calculate the so-called "*equivalent loading factor*" and "*equivalent annual management charge*"; these are respectively equal to the level of either kind of charges in a product having no other management costs and accumulating, under the peculiar ETT Italian tax regime, the same net final capital as the examined pension plan. The difference between the comprehensive cost measures (*charge ratio* and *reduction in yield*) and those thus calculated (*equivalent loading factor* and *equivalent annual management charge*) is thus a measure of the impact of taxes.

Results

The main result of the analysis is the existence of a clear dichotomy in the Italian pension market.

On one side, open pension funds have relatively homogeneous costs that are substantially aligned to those of analogous products offered abroad, and specifically in countries with highly developed financial markets, such as the US, where the average annual charge for an actively-managed, voluntary pension investment is about 100-150 basis points. Indeed, the Italian open pension funds with the lowest management costs can stand to comparison even to second-pillar pensions, both in Italy and within many other international countries, with an annual charge limited to 60-70 basis points. On the other side, PIPs have rather variable but usually high costs: the average equivalent annual charge

is about 2.4%. The result is that, on a such long horizon as that of a pension plan, up to half of the theoretically attainable amount can be absorbed by management costs, compared to only 30% for open pension funds.

Cost measures for personal pension plans
Constant annual contribution of €1,000 in real terms

Length: 15 years - annual return 5%

	Final pension wealth in euros (I)	Charge ratio (II)	Equivalent loading (III)	Annual IRR (IV)	Reduction in yield (V)	Equivalent annual charge (VI)
Open pension fund average (34)	**21,939.36**	**11.22%**	**8.22%**	**3.45%**	**1.55%**	**1.07%**
Worst open pension fund	21,034.48	14.88%	12.49%	2.90%	2.10%	1.67%
Best open pension fund	22,683.25	8.21%	4.71%	3.89%	1.11%	0.60%
Standard deviation	471.98	1.91%	2.24%	0.28%	0.28%	0.31%
Coefficient of variation	2.15%	17.02%	27.25%	8.21%	18.35%	28.90%
PIP average (24)	**20,150.63**	**18.46%**	**16.64%**	**2.32%**	**2.68%**	**2.29%**
Worst PIP	18,608.76	24.70%	23.81%	1.27%	3.73%	3.46%
Best PIP	21,670.62	12.31%	9.49%	3.30%	1.70%	1.25%
Standard deviation	886.96	3.59%	4.21%	0.59%	0.59%	0.64%
Coefficient of variation	4.40%	19.44%	25.30%	25.24%	21.87%	27.95%

Length: 25 years - annual return 7%

	Final pension wealth in euros	Charge ratio	Equivalent loading	Annual IRR	Reduction in yield	Equivalent annual charge
Open pension funds average (32)	59,183.67	**23.70%**	**16.78%**	**5.03%**	**1.97%**	**1.26%**
Worst open pension fund	55,201.66	28.83%	23.12%	4.52%	2.48%	1.82%
Best open pension fund	64,424.55	16.94%	8.39%	5.66%	1.34%	0.60%
Standard deviation	1,660.84	2.14%	2.68%	0.21%	0.21%	0.22%
Coefficient of variation	2.81%	9.04%	16.12%	4.15%	10.62%	17.78%
PIPs average (18)	**51,071.26**	**34.16%**	**29.65%**	**3.91%**	**3.09%**	**2.45%**
Worst PIP	45,878.09	40.85%	37.77%	3.10%	3.90%	3.35%
Best PIP	59,227.58	23.64%	16.71%	5.04%	1.96%	1.26%
Standard deviation	3,542.94	4.57%	5.72%	0.52%	0.52%	0.56%
Coefficient of variation	6.94%	13.37%	19.29%	13.32%	16.83%	22.86%

Length: 35 years - annual return 9%

	Final pension wealth in euros	Charge ratio	Equivalent loading	Annual IRR	Reduction in yield	Equivalent annual charge
Open pension funds average (32)	**163,799.83**	**39.90%**	**28.39%**	**6.60%**	**2.40%**	**1.46%**
Worst open pension fund	144,520.65	46.98%	37.99%	5.99%	3.01%	2.11%
Best open pension fund	194,582.27	28.61%	12.87%	7.43%	1.57%	0.60%
Standard deviation	8,393.81	3.08%	4.30%	0.25%	0.25%	0.26%
Coefficient of variation	5.12%	7.72%	15.15%	3.80%	10.43%	17.81%
PIPs average (18)	**134,951.08**	**50.49%**	**42.70%**	**5.61%**	**3.39%**	**2.47%**
Worst PIP	105,722.80	61.21%	56.77%	4.41%	4.59%	3.79%
Best PIP	173,732.93	36.26%	23.40%	6.89%	2.11%	1.17%
Standard deviation	17,120.99	6.28%	8.78%	0.63%	0.63%	0.67%
Coefficient of variation	12.69%	12.44%	20.56%	11.28%	18.66%	27.13%

The results presented in the table are quite robust to changes in the underlying assumptions. The sensitivity analysis shows that the *equivalent annual charge* varies by no more than one basis point for each percentage point of reduction in the assumed rate of return. The same reduction naturally leads to a decrease in the charge ratio and in the reduction in yield, as they include the effect of taxes levied on asset returns. The *equivalent loading* also decreases, albeit to a limited extent, highlighting that the main costs for long-term individual pension plans are the periodical charges proportional to assets, while the impact of initial charges proportional to contributions is less important.

However, it stands to notice that, because of initial *una tantum* costs, the impact of charges is a decreasing function of the length of the accumulation phase: this is especially true for some PIPs, few in number but with a substantial market share, which apply to the first year of contributions exceptional loadings that may even exceed 80%. On average, nevertheless, early withdrawal is not forcefully discouraged: for example, a participant who exploited every eight years the possibility of partial withdrawal within the limits fixed by the current fiscal regime would suffer

from an average increase of the equivalent annual charge of less than 5 basis points for open pension funds and close to 15 for PIPs.

Regressive elements are present, usually in the form of fixed costs, but also, in some PIPs, with lower percentage charges for higher contributions. Their impact, though, is not particularly significant. The comparison of the results presented above with those of simulations based on more realistic contribution profiles confirms that the equivalent annual charge decreases when contributions increase and that the correlation is stronger for the insurance policies; however, the highest reduction is 25 basis points for a horizon of 15 years and falls to merely 7 basis points (4 for open pension funds) for the 35-year case, which is presumably more important for a pension plan.

Conclusions

The main result of the analysis is the high average level of charges of individual pension policies. Their costs are higher than both those prevailing in other pension plans – be they Italian or foreign, individual or collective – and those advocated by researchers and regulators. This result is supported by the robustness to changes in the underlying assumptions and by the comparison with reports by supervisory authority (COVIP).

An explanation of these high costs might be found in risks undertaken by insurance companies. In the current start-up phase, knowledge of both demographic risks, incurred through *ex-ante* definition of the annuitization rates, and financial risks implicit in return guarantees is at best partial. This observation could warrant a favourable appraisal of a few policies offering more substantial guarantees and higher flexibility than open pension funds, without a disproportionate cost increase. Nonetheless, in the light of micro data, the presence of guarantees cannot suffice to explain the average costs of PIPs, because the cheapest policies happen to be those with guarantees, and not, as one would expect, those without.

There thus seems to be scope for improvements in the level of cost-efficiency of Italian individual pension plans. This would clearly be a positive development of the newly established pension market, also allowing insurers to leverage the peculiar characteristics of their policies as elements of competitive advantage.

I. The framework of supplementary private pensions and the reasons for this study

The years 2001 and 2002 witnessed the launch of *supplementary private personal pensions* in Italy. These products were disciplined by a sequence of legislative interventions culminating with the Legislative Decree n. 47 of February 18th 2000. The following two years may thus be considered a significant test of the products currently offered in the still timid Italian private pension market. The take-off of private pensions has been slow and problematic and has often been judged unsatisfactory. Within the current discussion about the opportunity of further regulatory interventions[1], it seems helpful to evaluate the intrinsic cost-effectiveness of Italian individual pension plans, as determined by their management charges, regardless of the exogenous statutory constraints imposed to their structure and of their contribution and withdrawal mechanisms [2].

The portfolio allocation of Italian households is still far from showing the substitution of public pensions wealth reduced after the Social Security reforms of the 1990s. In the third quarter of 2002 the net assets of the newly-established defined-contribution pension funds amounted to only €4 billion[3], representing less than 0.2% of the total financial wealth of Italian households[4]. Including the individual pension insurance policies does not change the picture, because insurers' reserves for these policies do not exceed €500 million[5].

Increases in the participation and in the contributions to supplementary private pension plans seem essential in particular for the youngest cohorts, the most affected by the restrictive reforms of the Social Security system, and in particular by the shift to a defined-contribution formula in the computation of public pension benefits[6].The aim of these reforms was to correct the dynamically unsustainable structural deficit of the particularly "generous" Italian PAYG system. To this end it was necessary to engineer a reduction (limited in the present, much sharper in the future) in the *replacement ratio,* i.e. the ratio of the first pension to the final wage, which used to be among the highest in Europe. For instance, some comparative simulations of the effects of the Amato and Dini reforms, considering different income profiles and contribution horizons, highlight that the coverage for 35 and 40 years of contributions under the Amato

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[1] Important changes concerning supplementary private pensions, in particular the equalization of the rules applying to the various products, are included in a bill introduced by the government in December 2001 and currently being discussed by Parliament (interested readers can refer to the data&laws section on the CeRP web site: http://cerp.unito.it).

[2] In other words, while the *overall cost-effectiveness* – obviously relative to some appropriate benchmark – is determined by all the parameters characterizing the individual pension saving program (such as the allocation of severance pay [TFR], the possible liquidity constraints resulting from an inflexible contribution schedule, the fiscal benefits accorded to the program and so on), the present work does not consider these elements, focusing exclusively on the various management charges (see Box 1).

[3] COVIP, 2002a, Tab. 1.

[4] The latter amounted to €2,373 billion at the end of September 2002 (BANCA D'ITALIA, 2003, Tab. 12).

[5] At the end of 2001 they amounted to €193 million, from premium payments of €355 million (COVIP, 2002b, p. 151), and during the first three quarters of 2002 the premium collection was of €325 million (COVIP, 2002a, p. 4).

[6] This formula determines pension benefits according to a principle of actuarial fairness, i.e. as a function of contributions paid during one's working life ("compounded" using the GDP growth rate) and of retirement age; for any given amount of compounded contributions, the older the retiree, the higher the pension benefits.

reform corresponds to ratios of 66.4% and 72.7% respectively; under the Dini reform they fall respectively to 46.7% and 63.6%[7].

Beyond allowing, from a microeconomic point of view, for suitable replacement ratios, a multi-pillar pension system should have many positive macroeconomic effects, in consequence of a reduction in the role of the public system and a parallel development of private supply. Specifically, public-sector borrowing requirements would be eased, and the overall efficiency of the economy should benefit from the removal (or at least the moderation) of several distortions in the labour market and in the creation and allocation of savings. Concerning the latter, the development of a private pension market will be accompanied by a substantial lengthening of investment horizons which could confer increased stability and efficacy to the financing of economic activity.

It is therefore appropriate to analyze the current state of complementary private pension provision. We refer the reader to a different study[8] for an analysis of the regulatory segmentation of the Italian private pension market: the present work concentrates on third-pillar products[9]. We present an analysis of the differences between the main types of private personal pension plans offered on the market, with a focus on the costs incurred by participants, which represent – assuming no systematic difference in gross returns and disregarding fiscal incentives – the crucial element defining the net return attainable in a defined contribution system.

Before presenting the core of our analysis, it seems useful to provide a succinct description of the legal and regulatory framework of the so-called third pillar of pension provision in Italy. It is defined by the aforesaid D. Lgs. 47/2000, which integrated the original regulations concerning supplementary pension plans established by the Legislative Decree n. 124 of April 21st 1993. Specifically, the new law introduced an organic regulation of individual pension plans, implemented either by individual participation to an open pension fund[10] or by purchasing a specific life insurance contract, usually called PIP[11].

Looking at the demand side, the two kinds of individual pension plans are homogeneously regulated as to participation requirements, withdrawal options and tax treatment. In particular, anybody may participate in a supplementary pension plan, regardless of employment, income, or position vis à vis the compulsory Social Security system. However, art. 1 of D. Lgs. 47/2000 effectively renders both third-pillar schemes no more than marginal, residual options for private (and to some extent public) employees, because it makes the tax deductibility of their contributions conditional on the transfer of TFR (severance pay) to collective pension schemes, such as contractual pension funds or, in their absence, collective participation to open pension funds[12].

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[7] ABI – ASSOGESTIONI (2000), p. 48. See also the simulations and comments in: FORNERO and CASTELLINO (2001), p. 48-49.

[8] FORNERO and FUGAZZA (2002).

[9] The Green Paper on *Supplementary Pensions in the Single Market* presented by the European Commission in June 1997 indicates with this definition those "schemes [that] may be used to supplement the first or second pillars, or both, [and that] have many of the characteristics of defined contribution pillar 2 schemes, although participation is not related to employment or the exercise of a profession, and is arranged individually by contract directly with a product provider " (European Commission, 1997, p. 4).

[10] Established by banks, financial-management companies (SGR), brokerage firms (SIM) and insurance companies.

[11] Following respectively art. 9-*bis* and art. 9-*ter* of D. Lgs. 124/1993.

[12] FORNERO and FUGAZZA (2002).

There are instead some important regulatory differences on the supply side. The management of pension funds assets may be entrusted to insurance companies only through contracts classified by the Italian insurance authority under Title VI (management of collective funds established to provide benefits in case of death, in case of life, or, furthermore, in case of the termination or reduction of employment). Instead, absent a specific provision in D. Lgs. 124/1993, pension insurance policies may be offered under Titles I (insurance on the length of human life) and III (policies as in Title I linked to investment funds). Moreover, pension funds are subject to the authority of a specific pension-fund regulator, COVIP, as well as to that of the financial regulator, CONSOB, for activities relating to the marketing of financial services, notably including the preparation of the pension fund prospectus. PIPs instead fall under the remit of the insurance regulator, ISVAP, and they only have to respect its rules concerning the information notice presented to prospective policyholders. As a consequence, there are many differences between the two information documents: for example, only open pension funds have to compare their returns to a benchmark, chosen according to the rules determined by COVIP.

The overall effect of these differences on the performance of pension products is difficult to evaluate. However, the possible difference in the management charges levied during the accumulation phase is easier to measure and has a more direct impact on the pension benefits offered to participants by the different individual pension plans. These charges are the object of the present analysis.

We consider the reduction in the amount available at retirement, or analogously in the rate of return attained during the accumulation phase, determined by the charge structure, taking into due account the annual taxation of financial returns. Our analysis is limited to the accumulation phase, disregarding annuitization and the fruition of the private pension. This choice is justified because, even if annuitization is the distinctive characteristic of pension saving and the cornerstone of the structure of fiscal incentives, to this day it does not seem to be a relevant area of competition among different market operators. It should be noted that, as a consequence, we also refrain from evaluating the scope of the tax advantages granted to complementary private pensions.

II. Methodology

Individual pension plans, during the accumulation phase, are financial products (possibly with an insurance element) for the long-term management of savings whose specific purpose is to finance retirement consumption. This purpose is reflected in the annuitization of the accumulated capital upon retirement, and motivates a preferential tax treatment compared to other kinds of savings, generally considered less deserving.

Therefore it is appropriate to use standard methods of calculation of the costs of long-term financial products to analyze the charges levied on private pension plans. These methods are not without ambiguities and difficulties, which are consequently present in this work too.

The fundamental problem is that it is impossible to compute the costs instantaneously at any point in time: the only meaningful measures are those referring to the whole investment period, namely, in our case, from the first contribution to retirement. These measurements require a simulation of the periodical payments and of the achieved returns on the basis of assumptions that necessarily affect, at least partially, the final result.

Moreover, there are in theory and in practice many kinds of costs which can be applied to a financial or pension product: charges can be either *una tantum* or periodical, proportional or fixed, determined *a priori* or *ex post* ;

hence, it is necessary to define precisely the range of charges taken into consideration and to choose suitable indices to summarize clearly in a single figure a whole complex fee structure.

1. Assumptions on returns and contributions

Since the focus of this work is an analysis of the costs of the third-pillar pension instruments currently offered in Italy, it would have been beside the point to carry out complex – and unavoidably questionable – forecasts of the returns achievable on financial markets and of their volatility; instead, we preferred to fix three simple scenarios with different time horizons and different returns, the latter being assumed constant within each scenario.

Considering a fixed retirement age of 65 years, we analyze the cases of:

- a 50-year-old participant choosing to invest in a "bond" portfolio with a 5% nominal annual return;
- a 40-year-old participant choosing a "balanced" portfolio with a 7% return;
- a 30-year-old participant choosing an "equity" portfolio with a 9% return.

At any rate, the sensitivity analysis presented below (see Table 3) warrants the conclusion that the specific values of the assumed returns do not have a substancial influence on the results.

We conjecture in each case a 2% annual inflation rate; we update all the nominal values on the basis of this parameter: however, we choose to update the amounts every three years rather than each year, with the exception of products with a precise indexation clause. The underlying assumption is that inertial mechanisms and *menu costs* discourage more frequent and smaller changes (for a low inflation rate such as the one we assume).

Concerning the contributions, we assume a quarterly periodicity[13]. We begin by considering a very simple, but not necessarily very realistic, contribution schedule, which has already been adopted by COVIP in its annual reports: namely, we consider constant payments in real terms, periodically adjusted to inflation according to the procedure described above, with a first-year amount of €1,000, i.e. the average contribution reported by COVIP in 2001. In order to test for the potential regressiveness of charge structures, we also examine the case of payments equal to the annual limit of tax deductibility[14].

Furthermore we analyze lifetime contribution profiles based on CeRP estimates of the earnings of Italian workers, distinguished by occupation, cohort and age[15]. In particular, we selected as representative the median, the twenty-fifth and the seventy-fifth percentiles of the income distribution for all private employees enrolled in the main first-pillar pension scheme (*Fondo Pensione Lavoratori Dipendenti*, or FPLD); we also consider, to represent high-income earners, the profile of the seventy-fifth percentile of the income distribution for white-collar workers and that of a group of professionals whose income shows a very high growth rate, typical of highly qualified workers[16]. Given that all these income profiles are more or less pronouncedly increasing in real terms, a well-known implication of life-cycle consumption theory is that the saving rate should increase over time; therefore we assume an increasing contribution rate, beginning at 5% for 30-year-old participants, 7% for 40-year-olds and 9% for 50-year-olds, and eventually

[13] Quarterly premia are not actually allowed by every PIP, but this does not materially affect the analysis.

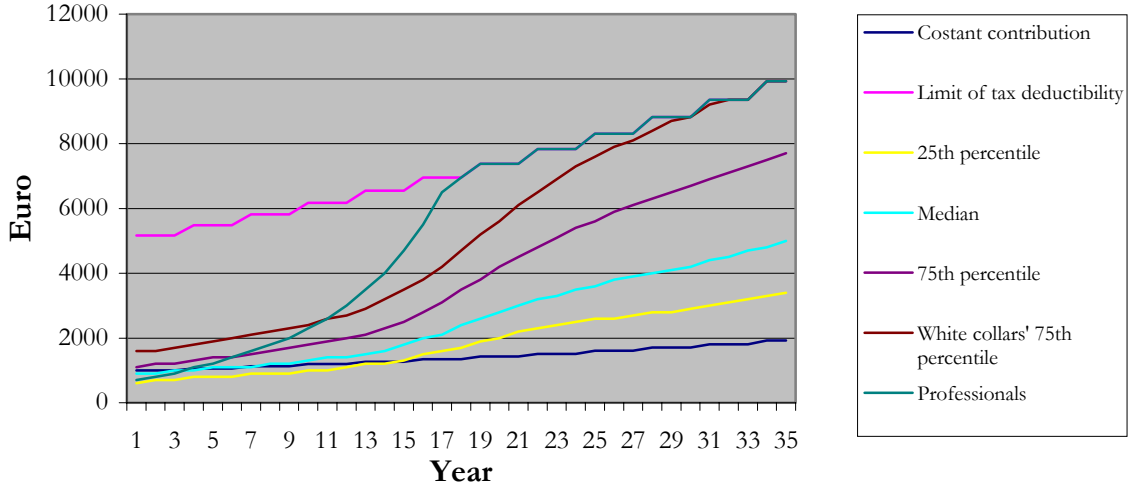
[14] Currently €5,164.57 (originally 10 million Lire).

[15] We are grateful to Margherita Borella, a researcher at CeRP, for providing these estimates.

[16] Hereafter the profile of this category is simply referred to as that of "professionals".

reaching in all cases a final level of 10%[17]. Finally, considering that contributions to personal pensions are freely determined by the participant and are not defined as a percentage of earnings, we think it more reasonable to round the contribution to the nearest hundred euros; moreover, we assume that the annual payment never exceeds the limit of tax deductibility[18].

Fig. 1 Contribution profiles considered
55-year horizon



2. Scope of the analysis

Our simulation of the accumulation phase of personal pension plans only considers contractually predefined characteristics of these products. This choice, due to the limited availability of information on a market still in the earliest phase of development, was also adopted by COVIP Reports. It implies excluding all the costs borne by participants that are only determined *ex-post* at the end of each accounting year. Among these are legal and judicial expenses, stamp duties and, for PIPs but not for open funds, the costs of auditing and of publication of share values[19].

Disregarding these costs is unlikely to have a substantial influence on our results; the only potential problem arises with asset-trading charges. Indeed, the international literature highlights the risk of perverse incentives emerging when asset trading is entrusted to companies belonging to the same group as the portfolio manager: the latter might be tempted to execute an excessive number of trades to increase the charges earned by the group, against the interests of investors (a practice known as "churning") [20]. However, this does not seem to be the case in the Italian private-pension market: the annual reports for the year 2001 of the pension funds belonging to the group with the highest market share

[17] Specifically, we derive the growth of the contribution rate from a logistic function.

[18] On the contrary, we do not consider the minimum contribution levels fixed by some insurance policies.

[19] Unlike open funds, all of which use an identical contract template, PIPs may each have a different division of expenses between company and policyholders; it should also be noted that expenses for the publication of share values clearly exist only for *unit-linked* policies.

[20] E.g. BLAKE and BOARD (2000).

listed trading charges averaging less than one hundredth of management charges; and the expenditure should be even lower for PIPs, which mainly invest in mutual funds and similar instruments[21].

In this regard it should be noted that the indirect management charges that may result from investing in these instruments are borne by the policyholders in the case of pension policies, but on the contrary by the managing company in the case of open pension funds. Needless to say, this is in practice a very significant cost component for PIPs, which in the present analysis we estimate:

- in a first simulation (whose results are reported in Table 1) as equal to the average value of the potential range of charges declared in the information notice or in the contract clauses of each insurance policy;
- in a second simulation (whose results are reported in Table 2) as equal to the minimum of this range, so as to provide a minimum estimate of the impact of these charges on the products under scrutiny.

Further assumptions on the characteristics of the products analyzed are due to the simple simulation of financial markets described above. First of all, we do not consider the possibility of systematic differences in the results attained by different portfolio managers, which in any case are not deducible *a priori*: therefore, the assumed rates of return are attributed to all the products considered, only taking into account the different time horizon of the various portfolios (and the correspondingly different portfolio choice).

More controversially, since we refrain from considering the volatility of returns, the guarantee of a minimum return offered by some investment lines is made to seem worthless. This is particularly an issue with regard to the internal investment funds used by insurers as the basis for with-profit annuities, which invariably offer a year-on-year minimum-return guarantee. Needless to say, this simplification is unrealistic; nonetheless it is not so significant as to require that we exclude from our analysis every product offering a financial guarantee. These guarantees are usually modest and the regulator remarks that "typically, the investment choices concretely made for the guaranteed lines are prudential and such as to maximize the probability of reaching the guaranteed minimum return level"[22], coming to the same decision of not imputing a specific share of costs to the guarantees. As a final note, it should be considered that the guarantees mainly regard bond investment lines (which include all the internal funds for with-profit annuities), and as a consequence the problem mainly affects the fifteen-year scenario.

The case of a supplementary guaranteed death benefit (typically term life insurance) often bundled with pension insurance policies is different. Even if it is not usually considered an important element of competitive advantage by the insurers themselves, it represents a product feature that is clearly outside the purely financial domain we are considering. Thus its cost is removed from the analysis, if necessary estimating it in the contracts where it is not explicitly indicated.

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[21] These investment vehicles are technically known in Italy as OICR (*organismi di investimento collettivo del risparmio*, i.e. undertakings for the collective investment of savings).

[22] COVIP (2002b), p. 131.

Box 1

The different kinds of fees charged by Italian individual pension plans

The charges incurred by participants in an **open pension fund** are defined by the rules of the funds themselves, drawn up according to a universally adopted template designed by the trade associations ABI, ANIA and *Assogestioni* and submitted to the COVIP, which on October 11th 2000 declared its conformity to the applicable laws and the interpretative guidelines adopted by the regulator itself. Various fees are levied, but they are clearly identifiable and limited in number.

To begin with, there are *una tantum* charges, invariably defined as fixed nominal amounts: a fee always has to be paid upon joining the fund; sometimes other payments are required in the case of asset withdrawals, transfer to another pension plan, and more rarely for switching between investment lines within the same fund.

The periodical costs universally include an annual management charge computed as a percentage of accumulated assets; moreover, the aforesaid regulation template admits a levy on yearly contributions, which is usually present, either as a proportional charge on the contributions themselves or, more frequently, as a flat fee.

The charge structures of **pension insurance policies** are more complex and varied, and often less transparent even if they are enumerated in the contract documents; indeed, a whole galaxy of different cost profiles seems to have been devised.

Una tantum charges are usually fixed in their nominal amount, although instances exist where they are instead proportional to assets within predefined limits; as with pension funds, they include the costs of withdrawal and transfer and occasionally those of switches between internal investment funds.

An initial flat fee is also not unheard of, but more typical is an increase in the loading of premia paid during the first year, sometimes by a percentage depending on the anticipated duration of the accumulation phase. The loading of recurrent premia is universal, and not infrequently the rates are a decreasing function of either the premium amount or the accumulated assets.

Other periodical costs include generic flat fees, which may be collected with each payment, with the first of each year, or more rarely from the assets at the end of each year even in the absence of contributions. Furthermore, there are always management charges computed as a percentage either of assets, in the case of unit-linked policies, or of returns (but with a fixed minimum percentage), in the case of with-profit annuities. These charges are often duplicated by the payment of management charges to the external funds the insurer invests in.

A few products, which account for a substantial share of the market, have extremely high initial costs (with loadings reaching 80% for the first year), and subsequently offer bonuses or partial refunds of the costs incurred to participants who remain in the pension plan until retirement without interruptions in the flow of contributions; besides, due to a specific request from ISVAP, part of the initial loading is also refunded in the case of transfer to another pension plan.

3. Cost measures

In addition to the aforesaid charges, we take into account the current Italian tax regime, and specifically the annual taxation of interest income and capital gains earned by supplementary pension plans, with a tax rate of 11%. On this basis, we compute the pension wealth accumulated by the participant at the time of retirement, as well as the theoretical amount of assets available for withdrawal in each previous quarter[23]. Although these values suffice to establish a ranking of the costs of the products examined, it is apparent that they cannot be interpreted directly as comprehensive cost measures.

Instead, we present two indices that are widely used in the literature:

i. the reduction in contributions or charge ratio

ii. the reduction in yield.

The former is obtained by comparing the actually accumulated assets to what could have been obtained by compounding the contributions without levying any charges[24]. The latter is the difference between the assumed market interest rate and the internal rate of return for the accumulation phase of the pension plan.

These measures are complementary, and the relationship between them depends on the simulation parameters: the duration of the accumulation phase, the annual rate of return, the temporal profile of contributions; in particular, it is clear that the longer the investment horizon, the higher the charge ratio corresponding to the same reduction in yield[25]. Therefore it is intuitive that the sensitivity of the two indices to changes in the simulation assumptions is different[26]. The most important point is that the sensitivity is lower for the measure that more closely reflects the actual charges. In fact an annual management charge proportional to accumulated assets results in an identical reduction in yield: thus, if this were the only charge levied on the product, the reduction in yield would be invariant with respect to all other parameters. On the other hand, a proportional loading of contributions results in an identical reduction in the accumulated assets: the charge ratio is thus invariant when the only cost is such a loading[27]. In realistic cases where there are different costs neither index is perfectly invariant: but in the Italian pension products we consider, the criterion of minimum sensitivity clearly highlights a marked prevalence of periodical costs proportional to assets[28].

A further crucial consideration is that in Italy, differently from abroad, the cost measures so computed cannot be entirely imputed to the charges imposed by the pension-plan manager, because they also include the annual taxation of financial gains[29].

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[23] This amount is purely theoretical because complete withdrawal is legally allowed in exceptional cases only.

[24] More precisely the index is computed as 1 – (actual amount / amount attainable without charges)

[25] Moreover, we will show on p. 15 that the more contributions increase over time, the lower is the charge ratio corresponding to a given reduction in yield.

[26] It is not even infrequent for the two indices to move in opposite directions.

[27] Cf. WHITEHOUSE (2002).

[28] See p. 19.

[29] Most private pension plans outside Italy are not subject to the taxation of returns, but operate instead under an EET (*Exempt-Exempt-Taxed*, with taxation of the pension payout only) or TEE (*Taxed-Exempt-Exempt*, with contributions made from after-tax income) regime.

One could devise several methods to distinguish the effects of management charges and taxes; in any case, the operation is fundamentally problematic and no solution is completely free from ambiguities[30]. Computing the impact of the various management charges without considering taxation (i.e. assuming a fictitious EET regime) might be considered the most intuitive procedure. In the present work we use an analogous, but more rigorous method, namely computing what we term the "equivalent premium loading" and the "equivalent annual management charge". Each corresponds to the level that the respective kind of charge should have to produce the same final pension wealth actually obtained in the pension plan under scrutiny, assuming that no other management fees existed but taking into due consideration the peculiar ETT structure of the Italian tax system[31]. The difference between the total charge indices (charge ratio and reduction in yield) and those so computed (respectively equivalent loading and equivalent annual charge) is therefore representative of the impact of taxes[32].

III. Results

The present work analyzed a large representative sample of Italian personal pension products[33]: in particular we considered the open pension funds managed by the 10 groups having the largest market shares, globally representing 83% of the total assets of Italian open pension funds[34], and 25 pension insurance policies that undoubtedly represent more than two thirds of the market[35].

1. The dichotomy of the Italian annuity market

Even if the number of participants is currently almost identical for the two kinds of pension schemes, i.e. about 320,000 for both open pension funds[36] and PIPs[37], the analysis clearly shows that the latter are characterized by management charges that are higher on average and more variable across the sample.

Table 1 below presents the case of constant annual payments of 1,000 euros in real terms: it is immediately apparent that the average equivalent annual charge (column vi) for pension funds is approximately half that for insurance policies; perhaps even more significant, the most expensive pension fund has lower costs than the average

[30] At the heart of the problem lies the intrinsic negative correlation between tax receipts and management charges: when taxes are levied on net results, any increase in charges corresponds to a less than proportional increase in total costs, because the share directly due to charges increases, but that due to taxation must decrease.

[31] Anyway our calculations showed that the differences between all the methods we considered to estimate the relative importance of management charges are very limited; hence, the choice of one method rather than another has a very limited influence on the results of the analysis.

[32] Precisely it measures the impact taxes would have if all the actual costs were replaced by the single equivalent fee.

[33] A detailed description of the sample is provided in the appendix.

[34] Data for the third quarter of 2002 reported by *Assogestioni*.

[35] Unlike pension funds, insurance companies do not disclose market shares; the representativeness of the sample is guaranteed nonetheless by the high concentration of the market: the two most widely sold policies alone account for 82% of the total, according to *UBS Warburg Global Equity Research* (August 6th 2002, www.borsaitalia.it/media/star/db/pdf/11573.pdf).

[36] Where 280,000 are individual participants while 40,000 joined through collective agreements.

[37] COVIP, 2002a, p. 4 and tab. 1.

PIP. On the other hand, the least costly policy is aligned with the average of pension funds - as proof of the variability of the costs of PIPs - and is actually preferable in the long term[38].

Table 1

Cost measures for personal pension plans

Constant annual contribution of €1,000 in real terms

Assumption of average value of the indirect management charges incurred by PIPs

(The sample size is listed in brackets after the average)

	Final pension wealth in euros	Charge ratio	Equivalent loading	Annual IRR	Reduction in yield	Equivalent annual charge
Length: 15 years - annual return 5%	(I)	(II)	(III)	(IV)	(V)	(VI)
Open pension fund average (34)	**21,939.36**	**11.22%**	**8.22%**	**3.45%**	**1.55%**	**1.07%**
Worst open pension fund	21,034.48	14.88%	12.49%	2.90%	2.10%	1.67%
Best open pension fund	22,683.25	8.21%	4.71%	3.89%	1.11%	0.60%
Standard deviation	471.98	1.91%	2.24%	0.28%	0.28%	0.31%
Coefficient of variation	2.15%	17.02%	27.25%	8.21%	18.35%	28.90%
PIP average (24)	**20,150.63**	**18.46%**	**16.64%**	**2.32%**	**2.68%**	**2.29%**
Worst PIP	18,608.76	24.70%	23.81%	1.27%	3.73%	3.46%
Best PIP	21,670.62	12.31%	9.49%	3.30%	1.70%	1.25%
Standard deviation	886.96	3.59%	4.21%	0.59%	0.59%	0.64%
Coefficient of variation	4.40%	19.44%	25.30%	25.24%	21.87%	27.95%
Length: 25 years - annual return 7%						
	Final pension wealth in euros	Charge ratio	Equivalent loading	Annual IRR	Reduction in yield	Equivalent annual charge
Open pension funds average (32)	59,183.67	**23.70%**	**16.78%**	**5.03%**	**1.97%**	**1.26%**
Worst open pension fund	55,201.66	28.83%	23.12%	4.52%	2.48%	1.82%
Best open pension fund	64,424.55	16.94%	8.39%	5.66%	1.34%	0.60%
Standard deviation	1,660.84	2.14%	2.68%	0.21%	0.21%	0.22%
Coefficient of variation	2.81%	9.04%	16.12%	4.15%	10.62%	17.78%
PIPs average (18)	**51,071.26**	**34.16%**	**29.65%**	**3.91%**	**3.09%**	**2.45%**
Worst PIP	45,878.09	40.85%	37.77%	3.10%	3.90%	3.35%
Best PIP	59,227.58	23.64%	16.71%	5.04%	1.96%	1.26%
Standard deviation	3,542.94	4.57%	5.72%	0.52%	0.52%	0.56%
Coefficient of variation	6.94%	13.37%	19.29%	13.32%	16.83%	22.86%
Length: 35 years - annual return 9%						
	Final pension wealth in euros	Charge ratio	Equivalent loading	Annual IRR	Reduction in yield	Equivalent annual charge
Open pension funds average (32)	**163,799.83**	**39.90%**	**28.39%**	**6.60%**	**2.40%**	**1.46%**
Worst open pension fund	144,520.65	46.98%	37.99%	5.99%	3.01%	2.11%
Best open pension fund	194,582.27	28.61%	12.87%	7.43%	1.57%	0.60%
Standard deviation	8,393.81	3.08%	4.30%	0.25%	0.25%	0.26%
Coefficient of variation	5.12%	7.72%	15.15%	3.80%	10.43%	17.81%
PIPs average (18)	**134,951.08**	**50.49%**	**42.70%**	**5.61%**	**3.39%**	**2.47%**
Worst PIP	105,722.80	61.21%	56.77%	4.41%	4.59%	3.79%
Best PIP	173,732.93	36.26%	23.40%	6.89%	2.11%	1.17%
Standard deviation	17,120.99	6.28%	8.78%	0.63%	0.63%	0.67%
Coefficient of variation	12.69%	12.44%	20.56%	11.28%	18.66%	27.13%

The peculiar structure of the Italian private pension market is also highlighted by a comparison with the international situation presented by the OECD[39].

The open pension funds have cost indices (average equivalent annual charge) aligned with the values found for actively-managed voluntary saving instruments (third-pillar and mutual funds) in the most important foreign countries, such as the USA, where the average charge is around 100-150 basis points. The best fund, whose only cost is an annual management charge of 0.6% of assets, is comparable to collective and occupational pension schemes in the USA, UK,

[38] This is because its costs, compared to those of a typical pension fund, include a higher loading but lower annual charges.

[39] OECD (2002).

Australia and Switzerland[40]; this suggests the existence of an area of potential competition between second- and third-pillar schemes.

Nonetheless, we cannot conclude that Italian open pension funds are cheaper than similar foreign products. Indeed, only three funds have equivalent annual charges lower than 100 basis points in balanced and equity investment lines (thus in the hypothesized 25 and 35-year scenarios); all the three funds actually impose no other recurring fee beyond the annual management charge proportional to assets and yet the latter is lower than average. Nevertheless these funds, theoretically preferable to their competitors, do not seem to be especially successful in the market: the one with the lowest costs in our simulation actually had a market share at the end of 2001 of barely 0.6% of total assets under management. Furthermore, the three products are managed by companies that also promote other and more successful pension funds, whose costs are roughly double[41]. Given that in one case the managing company explicitly declares that the cheaper open fund is designed for collective agreements and the more expensive one for individual participants, we conjecture that this explanation may be generally applicable, at least as a first approximation. In other words, we may simply be witnessing in Italy, as in many other countries, economies of scale and reduced marketing and sales expenses when participation to a pension scheme occurs through collective bargaining.

On the other hand, PIPs show notably higher costs than are usually found in other pension schemes, both Italian and foreign: the value of the equivalent annual charge, quite similar in all the scenarios, is close to 2.4%. The equivalent loading confirms that such a value is indeed high: the cumulative impact of a reduction in yield is necessarily higher when the compounding period is longer, and on a 35-year horizon, which should be typical of a pension plan, the management charges of the average PIP reduce the final pension wealth by 42.7%, a figure that lies outside the 10% – 35% range reported by the European Commission[42]. A comparison of the average equivalent loading of open pension funds and PIPs shows a difference of 14.31 percentage points, corresponding to a "discount" of one third of the cost[43].

These results are borne out by a comparison with the values computed by the regulator. In each annual report, COVIP presents the values of the "all-inclusive charge proportional to assets" summarizing all the costs of each personal pension plan. The computation differs from that for our equivalent annual charge both because of methodological reasons[44] and especially because of the simulation of a much shorter period (3-10 years instead of 15-35 years in the present analysis); however, the values obtained by the two methods are homogeneous enough to allow a meaningful comparison.

The similarity of the conclusions drawn in the two cases is indeed almost perfect. For open pension funds COVIP estimates an average charge on a period of 10 years equal to 1.2% for bond investments, 1.5% for balanced

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[40] Cf. JAMES (2002), p. 34.

[41] The most curious case is that of the lest costly fund, whose very name is almost identical to that of another product offered by the same company: the only difference seems to lie in the costs, which are more than double.

[42] EUROPEAN COMMISSION (2002).

[43] Moreover, under the usual assumption of decreasing marginal utility, the consumer also derives increasing marginal disutility from management charges; hence, each subsequent increase of equal amount is more detrimental. The passage from an equivalent loading of 28% to one of 43% is therefore very significant, independently from any judgement concerning a threshold for "admissibility".

[44] In particular, COVIP does not consider the taxation of annual returns; moreover, it determines the average costs sustained in each year of participation to the fund and simply compares them to average assets, a method that seems to represent an approximation where some composition effects are neglected.

portfolios and 1.8% for equities[45]; these values tend to decrease by about ten basis point as the investment horizon increases. For PIPs, in the 10-year case the regulator reports average values of 2.4% for with-profits annuities and 3.2% for unit-linked policies. The difference between the two types is confirmed by the present work as well: on a 15-year horizon we obtain an equivalent annual charge of 2.04% for the former and 2.60% for the latter; these values are completely analogous to those of the regulator, considering the aforesaid decreasing trend as a function of the duration of the pension scheme. In the long-term scenarios, where we did not consider with-profits policies[46], COVIP shows an adjustment of the average value to 2.2% compared to 2.5% in our analysis.

This last difference seems to be due to the different method used to estimate the indirect charges paid by policyholders because of investment in mutual funds. The regulator has adopted the convention of representing them as a surcharge equal to half the management charge of the internal fund underlying the PIP, while we choose a more precise reference to the potential range reported in each contract.

Of course, we cannot exclude that the average amount of this range constitutes an overestimate of the real cost: hence, we repeated the simulation under the assumption that the indirect charges are equal to the lower bound of the range. Table 2 shows that this new assumption, probably too reductive, determines the expected decrease of cost estimates to values below those reported by COVIP[47]; at any rate, the fundamental conclusion resulting from the double comparison with pension funds in both an Italian and an international perspective is unchanged.

Table 2

Cost measures for personal pension plans
Constant annual contribution of €1,000 in real terms

Assumption of minimum value of the indirect management charges incurred by PIPs

(The sample size is listed in brackets after the average)

Length: 15 years - annual return 5%						
	Final pension wealth in euros	Charge ratio	Equivalent loading	Annual IRR	Reduction in yield	Equivalent annual charge
PIP average (24)	**20,476.83**	**17.14%**	**15.11%**	**2.54%**	**2.46%**	**2.06%**
Worst PIP	19,257.92	22.07%	20.80%	1.73%	3.27%	2.95%
Best PIP	21,670.62	12.31%	9.49%	3.30%	1.70%	1.25%
Standard deviation	640.68	2.59%	3.04%	0.42%	0.42%	0.45%
Coefficient of variation	3.13%	15.12%	20.11%	16.36%	16.91%	22.04%
Length: 25 years - annual return 7%						
	Final pension wealth in euros	Charge ratio	Equivalent loading	Annual IRR	Reduction in yield	Equivalent annual charge
PIPs average (18)	**53,933.89**	**30.46%**	**25.13%**	**4.33%**	**2.67%**	**2.00%**
Worst PIP	48,562.08	37.39%	33.59%	3.54%	3.46%	2.87%
Best PIP	59,227.58	23.64%	16.71%	5.04%	1.96%	1.26%
Standard deviation	2,500.62	3.22%	4.04%	0.35%	0.35%	0.38%
Coefficient of variation	4.64%	10.58%	16.08%	8.09%	13.15%	18.78%
Length: 35 years - annual return 9%						
	Final pension wealth in euros	Charge ratio	Equivalent loading	Annual IRR	Reduction in yield	Equivalent annual charge
PIPs average (18)	**147,560.37**	**45.86%**	**36.48%**	**6.07%**	**2.93%**	**2.00%**
Worst PIP	109,412.57	59.86%	55.02%	4.59%	4.41%	3.60%
Best PIP	173,732.93	36.26%	23.41%	6.89%	2.11%	1.17%
Standard deviation	14,714.24	5.40%	7.54%	0.53%	0.53%	0.55%
Coefficient of variation	9.97%	11.77%	20.67%	8.66%	17.92%	27.69%

[45] COVIP (2002b), p. 130.

[46] This is a consequence of our assumption that participants choose diversified portfolios including a significant equity component.

[47] There is also a decrease in the costs variability within the sample.

Finally we report, for both PIPs and open pension funds, the sensitivity of results to the assumed rates of return: in particular in Table 3 we examine a scenario where all the rates are one percentage point lower than our baseline assumptions.

Table 3

Cost measures for personal pension plans
Constant annual contribution of €1,000 in real terms

Assumption of average value of the indirect management charges incurred by PIPs

(The sample size is listed in brackets after the average)

	Final pension wealth in euros	Charge ratio	Equivalent loading	Annual IRR	Reduction in yield	Equivalent annual charge
Length: 15 years - annual return 4%						
Open pension fund average (34)	**20,516.30**	**10.30%**	**8.08%**	**2.57%**	**1.43%**	**1.07%**
Worst open pension fund	19,682.11	13.94%	12.29%	2.02%	1.98%	1.68%
Best open pension fund	21,200.10	7.31%	4.62%	3.01%	0.99%	0.60%
Standard deviation	434.15	1.90%	2.20%	0.28%	0.28%	0.31%
Coefficient of variation	2.12%	18.43%	27.23%	10.98%	19.76%	28.83%
PIP average (24)	**18,875.79**	**17.47%**	**16.34%**	**1.45%**	**2.55%**	**2.29%**
Worst PIP	17,455.86	23.68%	23.40%	0.40%	3.60%	3.47%
Best PIP	20,254.38	11.44%	9.40%	2.40%	1.60%	1.26%
Standard deviation	821.04	3.59%	4.17%	0.59%	0.59%	0.65%
Coefficient of variation	4.35%	20.55%	25.52%	40.50%	22.97%	28.38%
Length: 25 years - annual return 6%						
	Final pension wealth in euros	Charge ratio	Equivalent loading	Annual IRR	Reduction in yield	Equivalent annual charge
Open pension funds average (32)	**52,628.12**	**22.00%**	**16.35%**	**4.15%**	**1.85%**	**1.27%**
Worst open pension fund	49,158.42	27.15%	22.59%	3.63%	2.37%	1.83%
Best open pension fund	57,154.58	15.30%	8.16%	4.78%	1.22%	0.60%
Standard deviation	1,436.61	2.13%	2.62%	0.21%	0.21%	0.22%
Coefficient of variation	2.73%	9.68%	16.02%	5.00%	11.24%	17.32%
PIPs average (18)	**45,600.87**	**32.42%**	**28.95%**	**3.03%**	**2.97%**	**2.46%**
Worst PIP	41,113.09	39.07%	36.87%	2.23%	3.77%	3.35%
Best PIP	52,640.11	21.99%	16.33%	4.16%	1.84%	1.26%
Standard deviation	3,053.69	4.53%	5.57%	0.52%	0.52%	0.56%
Coefficient of variation	6.70%	13.96%	19.24%	16.99%	17.35%	22.76%
Length: 35 years - annual return 8%						
	Final pension wealth in euros	Charge ratio	Equivalent loading	Annual IRR	Reduction in yield	Equivalent annual charge
Open pension funds average (32)	**136,970.70**	**37.60%**	**27.62%**	**5.72%**	**2.28%**	**1.47%**
Worst open pension fund	121,377.32	44.70%	37.00%	5.12%	2.88%	2.11%
Best open pension fund	161,807.41	26.28%	12.49%	6.55%	1.45%	0.60%
Standard deviation	6,787.50	3.09%	4.20%	0.25%	0.25%	0.26%
Coefficient of variation	6.70%	8.23%	15.21%	4.35%	10.91%	17.69%
PIPs average (18)	**113,567.53**	**48.26%**	**41.65%**	**4.74%**	**3.26%**	**2.47%**
Worst PIP	89,852.87	59.06%	55.46%	3.54%	4.46%	3.80%
Best PIP	144,907.81	33.98%	22.81%	6.01%	1.99%	1.17%
Standard deviation	13,833.31	6.30%	8.55%	0.63%	0.63%	0.67%
Coefficient of variation	12.18%	13.06%	20.53%	13.23%	19.19%	27.13%

Of course, there is a systematic reduction in the values of the charge ratio and reduction in yield, given that they include the effect of the proportional taxation of annual returns. The fundamental result emerging from the table is the remarkable robustness of the equivalent annual charge, which never varies by more than one basis point, while the decrease in the equivalent loading is limited, but still significant.

The different variations in the two indices are linked to the relationship between each of them and the actual fee structure, as we mentioned above[48]. As COVIP already pointed out[49], the main type of cost characterizing Italian

[48] See p. 13.

pension products is the annual management charge proportional to assets; other kinds of fees, including the loading of insurance premia, are generally less important when the horizon is long enough[50].

We can therefore draw two conclusions from the sensitivity analysis:

- the equivalent annual charge is the most suitable measure to summarize the costs of third-pillar pensions in Italy;
- the results we present can be considered substantially indifferent to the specific assumptions on financial returns.

On this last point, surely the most important, we also remark that further reducing the assumed rates by one percentage point entails an increase in the equivalent annual charge of just one basis point[51].

2. Possible explanations of the cost of pension insurance policies

A first possible justification of the higher charges imposed by PIPs would hinge on the demographic guarantees that properly constitute the insurance element in these products. The issue is not, of course, simply the expected annuitization at the time of retirement, which characterizes all pension schemes and anyway accounts for a specific cost at the start of pension payout; what can separate insurance policies from open pension funds is the guarantee of predetermined annuity rates.

In the case of pension funds, both open and occupational, the annual pension benefits corresponding to a given pension wealth[52] may vary until the beginning of pay-outs, because of revisions to the mortality assumptions motivated by the actual demographic evidence. A similar clause may be included in insurance policies, with the only restriction that changes are not allowed during the last three years of the accumulation phase; but PIPs, like traditional deferred annuities, may also determine at the time when each premium is paid the annuitization rate to be applied to the share of the final pension wealth deriving from that premium. This obviously implies the underwriting of the risk deriving from forecast errors in the projection of future mortality rates: a risk that may well be quite significant for long deferment periods, such as those characterizing pension schemes.

However logical, the hypothesis that such a risk transfer is compensated by the greater charges imposed on policyholders does not seem to be confirmed by microeconomic data: indeed, the policies that offer this guarantee are on average less costly than those that do not; the average difference in the equivalent annual charge is lowest in the thirty-five-year scenario, where it amounts to 41 basis points. Moreover, in all scenarios the least costly policy offers predetermined annuity rates, while the highest costs are to be found in a PIP with no demographic guarantees.

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[49] COVIP, (2002b), p. 131.

[50] Although there are some cases of exceptional front-loading of the charges in PIPs; see p. 13.

[51] There is a significant variation only in the case of PIPs in the 15-year scenario with a 3% rate: on the one hand, some unit-linked policies even have negative internal rates of return; on the other hand, for many with-profits policies the constraint of a guaranteed minimum return of 2.5% becomes binding, reducing the average equivalent annual charge to 2.15%. However, this phenomenon is not due to sensitivity to the reduction in yield itself, but to the reaching of a minimum threshold under which financial guarantees demonstrate their value.

[52] As well as to the age and gender of the pensioner.

A second possible line of justification of the higher cost of PIPs could refer to financial rather than demographic guarantees; more specifically, to the guarantee of a minimum annual return offered by the internal funds that support with-profits policies, which represent about half of the PIP market. But this hypothesis, like the previous one, is apparently not supported by the empirical evidence, since we have shown that with-profits annuities have lower average costs than unit-linked policies which offer no financial guarantees. This finding is substantially confirmed by an examination of the open pension funds; while the two most expensive bond investment lines do offer a minimum-return guarantee and happen to have an identical equivalent annual charge of 1.66%, the overall market trend is completely different: in the multi-line pension funds, a group that includes neither of the aforesaid lines, a financial guarantee always accompanies the minimum management charge and an extremely conservative investment policy[53].

Another hypothesis could rely on the cost of offering more choices: in a PIP, the policyholder is legally allowed to allocate his pension assets freely among the various internal investment funds offered by the policy, while, in the case of open pension funds, the participant may only choose a single one at any time. Even this interpretation does not seem entirely satisfactory, because the options offered by insurance companies are usually quite limited: there is a single case where the insured can choose up to 40 investment funds within a wide range of products offered by several different asset managers; but most PIPs have no more internal funds than there are investment lines in the average open pension fund, and investing simultaneously in many of these funds does not seem such an exceedingly valuable opportunity. Moreover, it is worth to mention that with-profit annuities typically offer no chance at all of tailoring the investment portfolio to the individual preferences of the policyholder; yet these products, albeit less costly than unit-linked policies, are still more expensive than open pension funds.

The greater amount and lower homogeneity of the charges levied on PIPs could arguably be explained by the paradigm of *"More Information – More Competition"*. The fee structure of open pension funds is characterized by a remarkable simplicity, and the good quality of the information provided to potential participants allows to compare different products, thereby leading the funds to price competition. This transparency has determined a gradual convergence and an overall reduction in fees, so that over time the price of pension-fund management services has become relatively homogeneous. On the contrary, the complex fee structure of insurance policies and the poor quality of the information notice presented to potential policyholder do not allow an easy comparison between different contracts; this allows PIPs to compete using financial marketing strategies that do not rely on competitive pricing.

Support for this interpretation is offered by Table 4, showing that the open pension funds promoted by the two groups holding the largest shares of assets under management[54] have lower costs than the (unweighted) average computed for the whole sector, while the opposite is true for the two most successful PIPs, which dominate the market in spite of higher costs[55].

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[53] This does not imply that the guarantee is worthless, nor that it is not priced: the rare money-market investment lines without a guarantee have an annual management charge about 10 basis points lower than that of the analogous guaranteed products; the latter, though, are never more expensive than the other investment lines in their fund, including bond lines.

[54] Data for the third quarter 2002.

[55] We only consider one policy in the cases of 25 and 35 years, since the other is a with-profits annuity.

Table 4

Cost measures for personal pension plans
Constant annual contribution of €1,000 in real terms
Restriction to the two market leaders in each segment

Pension insurance policies

	Final pension wealth in euros	Charge ratio	Equivalent loading	Annual IRR	Reduction in yield	Equivalent annual charge
15 years - 5% return	19,511.13	21.05%	19.62%	1.91%	3.10%	2.76%
25 years - 7% return	49,194.28	36.58%	32.60%	3.64%	3.36%	2.76%
35 years - 9% return	124,479.52	54.33%	47.80%	5.25%	3.75%	2.90%

Open pension funds

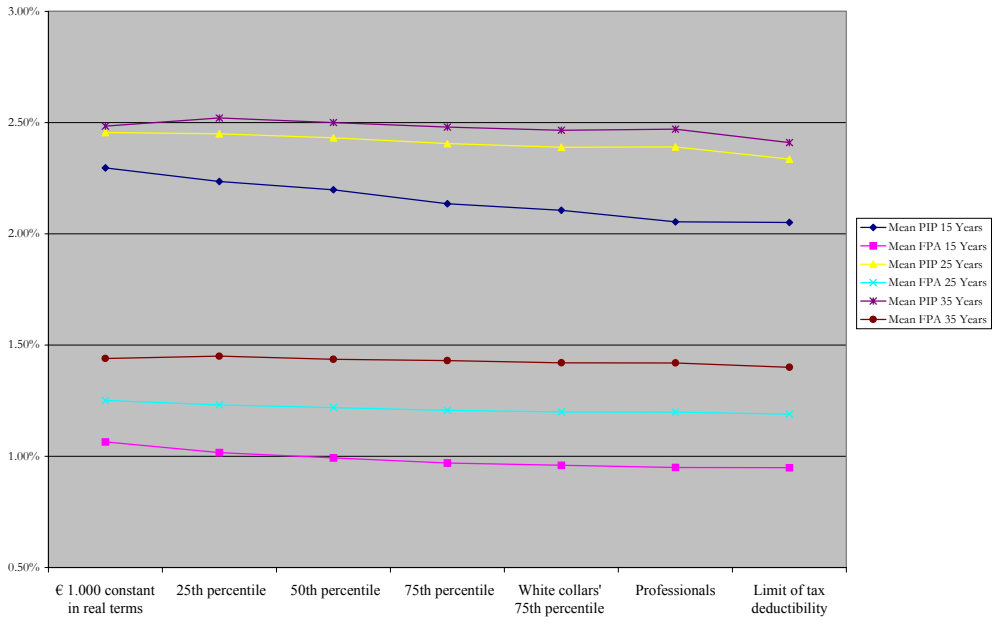
	Final pension wealth in euros	Charge ratio	Equivalent loading	Annual IRR	Reduction in yield	Equivalent annual charge
15 years - 5% return	22,230.17	10.05%	6.85%	3.63%	1.37%	0.88%
25 years - 7% return	59,816.52	22.88%	15.77%	5.12%	1.88%	1.18%
35 years - 9% return	164,824.61	39.53%	27.88%	6.64%	2.36%	1.43%

3. Contribution hypotheses and differences in cost

Any set of charges including flat fees has, by definition, a greater proportional impact on smaller sums: it follows that we expect some regressiveness in the fee structure of third-pillar pension plans; this expectation is stronger in the case of PIPs, where premium loading can be a negative function of the contribution.

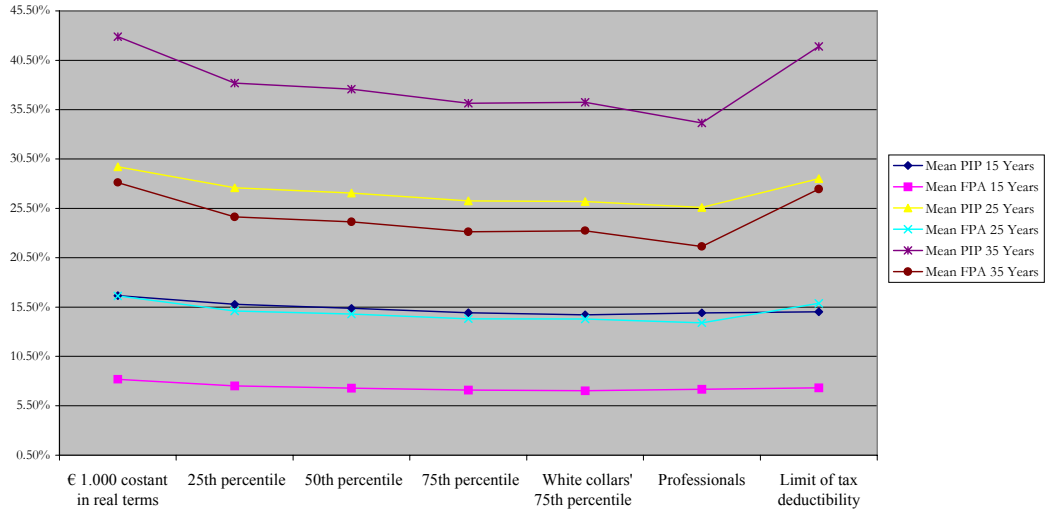
We repeated our simulations using realistic contribution profiles of individuals belonging to occupational categories whose income profiles are clearly distinguishable. The results confirm both the exactness of this expectation and the robustness of the results obtained in the simpler scenario of constant real contributions: in other words, the regressive effect is clearly present and indeed more pronounced for insurance policies than for pension funds; but on the other hand it is so limited to be negligible, especially on the longer horizons which should be considered the most significant. All these findings are clearly illustrated in Fig. 2, which shows the equivalent annual charge as a function of the contribution hypothesis, arranged on the horizontal axis in increasing order of final pension wealth.

Fig. 2 Annual equivalent charge



In general, we observe the anticipated slightly decreasing trend, steeper in the case of PIPs. However, for the 35-year horizon the equivalent annual charge is higher in the simulation of the contribution history of low-income earners than in the baseline scenario of constant real contributions. This does not actually depend on the average level of payments as much as on their growth rate: as we mentioned above, the value of each index and the relationship between them depend on the underlying simulation assumptions; given the variety of charges present in a real product, a more increasing contribution profile corresponds to a higher reduction in yield and to a lower charge ratio. As a consequence we can see in Fig. 3 that the equivalent loading presents the exceptional increasing trend for the highest payments instead of the lowest.

Fig. 3 Equivalent loading



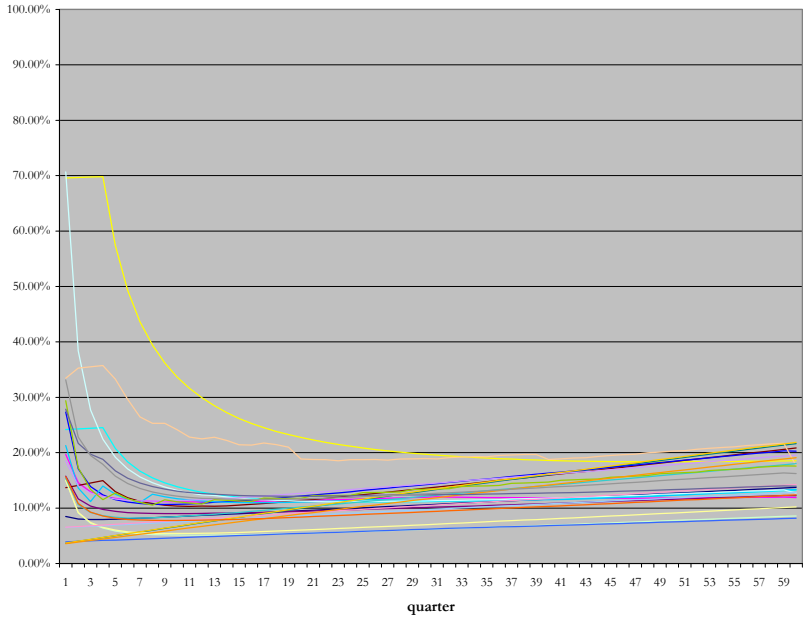
It can be pointed out that participants with a higher growth rate of nominal payments derive greater advantage from the prevalence of the annual management charge proportional to assets within the fee structure: this, rather than actual regressive effects, is the reason of the lower equivalent loading resulting for professionals[56].

We have to consider, however, that the aforesaid prevalence is only assured on longer horizons: beyond ten years, it is always present; for shorter periods, the impact of premium loading is dominant for many PIPs, including the two market leaders, and therefore the equivalent loading decreases over time; this is shown in Fig. 4 for the simulation of the median income earner on a 15-year horizon.

This pattern is partially due to the presence of an *una tantum* charge reflecting customer-acquisition costs, and to this extent it can be found in open pension funds too; but in some policies, in particular the two most popular ones (corresponding to the two highest curves in the graph), there is a mechanism of front-loading to discourage the interruption of the initially anticipated payments: in these contracts the loading applied to the first-year premia can indeed be greater than 80%.

[56] The effect is not present on the 15-year horizon because the professionals' contribution is then equal to the highest limit of deductibility and is therefore constant in real terms.

Fig. 4 Equivalent loading upon withdrawal



The most intuitive interpretation would be that such a pricing policy reduces competition, discouraging the transfer of the policyholder to another pension plan. But this is mistaken: in fact the charges imposed by these contracts for the following years, in terms of premium loading and annual charges proportional to assets, are still higher than those of most pension funds and of many PIPs; hence, participants would anyway profit from transferring as soon as possible. The heavy initial loading seems to be rather a stimulus to the sales force, which apparently retains most of it: furthermore, the market seems to reward these aggressive sales techniques, confirming the dictum that "insurance is sold, not bought".

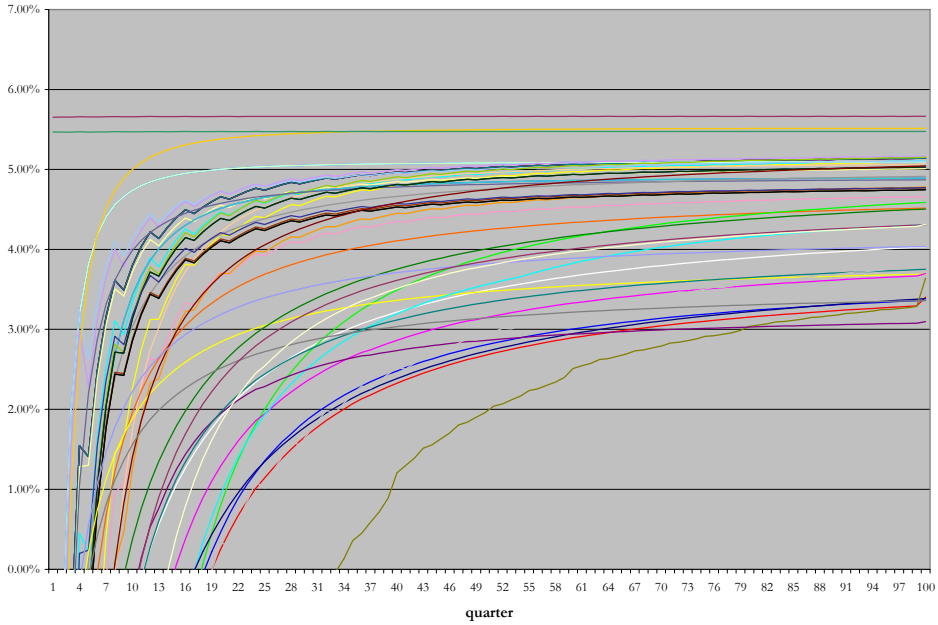
These sales policies, though, may result in episodes of mis-selling, as infamously happened in the British market, where customers are sold pension products unsuited to their true needs. On this point, one must surely welcome the intervention of ISVAP, whose Circular n. 487/D of October 24th 2002 has forbidden the sale of pension insurance policies using "multilevel marketing" or "network marketing", i.e. door-to-door sales techniques where salespeople are not properly licensed insurance agents and belong to a pyramidal hierarchical structure[57].

Even abstracting from the peculiarities of the insurance market, it is worth observing that anticipated withdrawal of the personal pension position is generally penalized, with the exception of the few open pension funds levying only an annual charge proportional to assets: Fig. 5 presents the IRR as a function of the time of withdrawal from the pension plan[58].

[57] The regulator had to intervene on a situation regarding one of the two market-leading PIPs.

[58] The graph shows both open funds and PIPs, but only the latter present a negative IRR on horizons longer than two years.

Fig. 5 IRR upon withdrawal



On the one hand a reduction in the effect of costs over time is consistent with the core function of a pension plan and with the long-term horizon that should characterize it. It is no coincidence that, following the Chilean example, many South American supplementary pension schemes have opted to impose no charges other than premium loading: this structure more than any other induces a decreasing reduction in yield as a function of the length of the accumulation phase[59].

On the other hand, even if we refrain from confronting the *vexata quaestio* of the optimal fee structure, which surely goes beyond the scope of this work and arguably admits no unique solution, we point out that a cost profile discouraging anticipated withdrawal could be less suitable to the Italian situation, where the law assigns to supplementary pension schemes precautionary savings as well, and specifically the severance-pay (TFR) contributions that to this day have represented significant social buffer-stock savings.

In any case, the impact on costs, is limited and most likely not worrying: for example, a worker making partial withdrawals every eight years within the limits fixed by the current tax laws would only bear an average increase in the equivalent annual charge of less than 5 basis points for pension funds and close to 15 for PIPs.

IV. Conclusions

This work analyzed the costs of third-pillar pension products offered in Italy, namely pension insurance policies and individual participation to open pension funds, using indices widely employed in the international literature.

The simulation covered the cases of plans lasting fifteen, twenty-five and thirty-five years, distinguishing between participants with different income profiles. The results show a clear differentiation between the costs of PIPs

[59] And increasing as a function of the growth rate of payments .

and those of open pension funds: the latter are entirely analogous to similar products offered abroad and in the best cases are no more costly than second-pillar pension schemes, both Italian and foreign[60]; on the contrary, the insurance market is characterized by heavy charges, worse than either those prevailing in other pension schemes or those advocated by researchers and regulators.

There is no denying that the market is still in an early phase of its development and that the imperfect knowledge of both demographic and financial risks underwritten by insurance companies can provide a partial justification of the higher costs of policies. Such considerations may warrant a favourable appraisal of some PIPs, which offer greater guarantees and higher flexibility than pension funds without a disproportionate increase in costs.

A future alignment of the other PIPs to this level of efficiency, currently attained by only a few products, would clearly constitute a positive development of the market and would increase the value of the peculiarities of insurance products as elements of competitive advantage. At the same time, it is also true that even among open pensions funds, despite their lower average cost, there are more expensive products, a gradual reduction in whose charges is obviously to be wished.

It might be appropriate, as an anonymous referee suggested, to study the trade-off emerging from the comparison of more efficient products that are difficult to sell, such as open pension funds, and more costly products that by no accident enjoy a higher market penetration, namely PIPs. So long as fees cannot be flatly denounced as "excessive", one should acknowledge the necessity of providing incentives for the sale of products that "nobody will buy unless they are actively sold".

Unfortunately no data are currently available to assess whether market trends are explained by the greater difficulty of selling a less costly product, or rather by internal competition – in other words by the discovery that the same effort can sell savers a costly PIP as easily as a more efficient pension fund; which would imply that any financial group offering both would prefer to promote the former even though the latter were not loss-making. At any rate, some scepticism is clearly warranted, since salespeople's earnings derive from premium loadings, while the weakest link in the fee structure of most PIPs seems to be represented by the indirect management charges for investment in mutual funds.

[60] The regulator reported an average costs-to-assets ratio of 0.7% for occupational pension funds in 2001. COVIP, 2002b, p. 82.

References

ABI – ASSOGESTIONI (2000) *Studio sulla previdenza complementare*.

BANCA D'ITALIA (2003),"Aggregati monetari e creditizi dell'area dell'euro: le componenti italiane", *Supplementi al bollettino statistico – Indicatori monetari e finanziari Aggregati monetari e creditizi dell'area dell'euro*, XIII (7) – January.

BLAKE, David and John BOARD (2000), "Measuring Value Added in the Pension Industry", *The Geneva Papers on Risk and Insurance*, Vol. 25, No. 4 (October), 539-567.

COVIP (2002a), COMMISSIONE DI VIGILANZA SUI FONDI PENSIONE, *I Fondi pensione: principali aspetti quantitativi, aggiornato al 30 dicembre 2002 (con alcuni dati aggiornati al 30 novembre 2002)*, Rome, December.

COVIP (2002b), COMMISSIONE DI VIGILANZA SUI FONDI PENSIONE, *Relazione per l'anno 2001*, Rome, May.

EUROPEAN COMMISSION (1997), *Green Paper on Supplementary Pensions in the Single Market* , June (COM(1997) 283 final).

EUROPEAN COMMISSION (2002), *Proposal for a Joint Report by the Commission and the Council on Adequate and Sustainable Pensions*.

FORNERO, Elsa and Onorato CASTELLINO (eds) (2001), *La riforma del sistema previdenziale italiano*, Bologna, Il Mulino – Studi e Ricerche.

FORNERO, Elsa and Carolina FUGAZZA (2002), "Un mercato troppo segmentato? Uniformità e differenze nel mercato previdenziale italiano", *Working Paper MEFOP*, N. 4/02.

JAMES, Estelle, James SMALHOUT and Dimitri VITTAS, (2002), "Administrative Costs And The Organization Of Individual Account Systems: A Comparative Perspective", in: OECD (2002).

OECD (2002), *Private Pension Systems: Administrative Costs And Reforms*, Private Pensions Series No. 2, Paris, OECD Publications, 2002.

WHITEHOUSE, Edward (2002), "Administrative charges for funded pensions: comparison and assessment of 13 countries", in: OECD (2002), 85-153.

Appendix: The sample of products considered

Open Pension Funds		
Group	**Fund Manager**	**Fund**
1. Intesa BCI	Intesa Asset Management SGR	Carime Previdenza Carinord Centrale Previdenza Attiva Giustiniano Previd-System Previmaster Unione
2. Arca	Arca SGR	Arca Previdenza BPB Impresa e Lavoro BPB Mercato e Progresso Lavoro e Futuro
3. Monte dei Paschi di Siena	a) Banca Monte dei Paschi di Siena b) Ticino Vita c) Montepaschi Vita	Paschi Previdenza Kaleido Prisma Kaleido Tetraedro Diadema-Acquamarina
4. Sampaolo IMI	a) Fideuram Fondi SGR b) Sampaolo IMI Asset Management SGR	Fondo Pensione Fideuram Sanpaolo Previdenza
5. Intesa BCI - Assicurazioni Generali	SIM Co. Ge. F.	Progetto SIM Co. Ge. F.
6. RAS	a) Riunione Adriatica di Sicurtà b) Duerrevita	Previras Previ R+R
7. Assicurazioni Generali	a) INA b) Generali Vita c) Alleanza Assicurazioni	Fondo Pensione INA Previgen Global Previgen Valore AlMeglio
8. La Fondiaria Assicurazioni	La Fondiaria Assicurazioni	Conto Previdente Fondiaria Previdenza
9. Unipol	Compagnia Assicuratrice Unipol	Unipol Futuro Unipol Insieme Unipol Previdenza
10. Eptaconsors	Eptafund SGR	Aedifico Arturo Arturo 06 Euganeo Previdenza Perseo Futuro

Pension Insurance Policies	
Company	**Product**
Alleanza Assicurazioni	Alleata
AXA Assicurazioni	Cumulattivo Beneficio Fiscale Gestione Attiva Beneficio Fiscale
Bayerische Vita	Piano Pensionistico Bayerische
BNL	Vita Unit Previdenza
Bipiemme Vita	Domani Sereno
Società Cattolica di Assicurazione	Domani Certo
Fideuram Vita	Piano Pensione Individuale
Finanza & Futuro	Progetto Previdenza
La Fondiaria Assicurazioni	Più Pensione
GenCasse Professionali	Professione Futuro
Generali Vita	Valore Pensione
Lloyd Adriatico	MyLife Previdenza
Mediolanum Vita	Europension TaxBenefit
Monte Paschi Vita	Terzo Tempo
Società Reale Mutua di Assicurazioni	Cento Stelle
Roma Vita	Progetto Crescita Previdenza
Sanpaolo Vita	Vita & Previdenza
Skandia Vita Skandia Vita per Banche di Credito Cooperativo dell'Abruzzo e del Molise Skandia Vita per TERCAS	Soluzione Unit Linked con Beneficio Fiscale Sestante Unit Linked con Beneficio Fiscale Tercas Unit Linked con Beneficio Fiscale
Toro Assicurazioni	Toro Futuro Sereno
Winterthur Vita	Winpension
Zurich Investments Life	VIPensiono VIPensiono Azionario

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