TITLE: THE FIFTH GENERATION OF ACTUARIES AND THEIR ROLE IN DEFINED CONTRIBUTION SCHEMES.

TOPIC: THE ROLE OF THE ACTUARY IN THE MONITORING OF DEFINED CONTRIBUTION MODELS:

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Around the world there has been a profound shift defined benefit to defined contribution models. Historically actuaries have been viewed as appraisers of defined benefit risks, associated with "first-generation" actuaries: general life actuaries or, at most, "second generation": actuaries of defined benefit type pensions.

But the world has changed, and so have we, graduating to "third-generation" actuaries evaluating the risks of elements in pensions; "fourth generation" actuaries evaluating the financial risks of pension funds featuring defined contribution models; all the way to "fifth generation" actuaries, introducing ERM analysis into the management of pension funds, including operational risks.

This work will focus on the role of actuary in Spain with defined contribution schemes, where Spanish regulations may be among the most advanced in the world, and where the possibilities for professional activity allow us to talk about these five generations of actuaries.

The CONCLUSIONS will be:

- Firstly, that the actuary should serve as kind of great orchestra conductor, working with professionals from other disciplines: economists, financial analysts, computer technicians, lawyers, group administrators, etc. to address the five different visions that converge in the world of pensions: stage of activity with death and invalidity, retirement stage and its derivatives, administrative management, financial management, and ERM.

- Secondly, the actuary should realize and appreciate how consequential his profession is and the degree of responsibility which it implies, as his work has an impact on society, affecting social welfare, in general, and that of employees in particular.

KEY WORDS: life, pensions, administrative management, financial management, regulations, training, team, interdisciplinary, defined contribution, defined benefit.

1. INTRODUCTION.

For decades the actuary's role in complementary social welfare has been his involvement in analyzing benefits and contributions, mortality trends in various risk groups and degrees of disability, and planning flows, insurance and reinsurance.

The transformation of public social welfare models from redistribution to capitalization models, as well as the transformation of both public and private models from set benefits to set contributions, has highlighted the importance of having actuaries who are knowledgeable of all aspects of investments.

An actuary cannot, in the author's opinion, limit himself to dealing exclusively with topics traditionally associated with insurance. The actuary must integrate his knowledge and rely on professionals around him with knowledge of legal, accounting, tax and mercantile issues. But he must particularly integrate a knowledge of investment management into his own personal knowledge or into that of the team at his disposal, since such knowledge is the backbone that props up the benefits that will be received by the future beneficiaries of said contributions.

An actuary's work should adhere to the following cycle: goals, strategic structure, tactics, management control, proposal of measures to integrate into the same analysis the contribution flows, the profits expected based on the portfolio and on the assumed risk, economic cycles and trends in the company's staff. The actuary must, therefore, contribute to setting the strategy for investing the defined contributions and help to make changes to the portfolio in response to both financial events and to any goals that have been reached.

This work will aim to provide practical examples from Spain that span the same period as the financial crisis. The work will focus on these examples, the results of which were considerably different depending on whether they were designed based on strategic objectives tied to the group of employees and pensioners or on whether their overriding goal was simply to attain "maximum profitability with minimum risk".

2. AN ACTUARY: SPECIALIST IN THE MONITORING OF RISKS.

In my view, among the countries I know, Spain represents a model in terms of the role which the actuary should have in defined contribution.

Thus, I will present information on the Spanish control model. I am grateful for this opportunity to present some ideas, and at the same time explain our own experience.

For decades most actuaries have operated paying attention to insurance products, both life and non-life. Among the former we can include everything related to defined benefit in the world of pensions. More recently a major field has opened up in the world of health, as health systems need our work.

However, in the transformations of defined benefit into defined contribution models there have been shortcomings and, on many occasions, a notable deficiency in the defense of the actuary's role in them.

That said, I'd like to ask you all if you believe that the actuary has a role in defined contribution, because at the colloquium celebrated in Edinburgh September 2011, at which I talked about this topic, I was somewhat disconcerted when I thought I detected a certain degree of confusion, and even dismay, with regards to the role which actuaries should have in defined contribution - though perhaps this was simply a misunderstanding on my part, in which case I do apologize.

But I don't think so. In my own country I've had to argue with my colleagues to defend our role in this regard.

Are we or are we not specialists in the monitoring of risks associated with different facets of human activity?

Do we not have knowledge which we can integrate into a multi-faceted, comprehensive vision of the aspects affecting defined contribution?

3. ACTUARY KNOWLEDGE.

In Spain we have the advantage that the role of the actuary is defined by legislation, which must be applied to pension plans and funds.

In pension systems the actuary's involvement is required, and he is assigned a role throughout the plans' development in what have come to be called their actuarial and financial aspects.

But, to integrate the knowledge we have acquired into our formation.

- **Labor Law, Social Security Law, Insurance Law, Pension Plans and Mutual Society Plans, Civil Law.**
- **Statistics and Demographics.**
- **Macroeconomics.**
- **Business Economics.**
- **Biometrics.**
- **Financial Mathematics.**
- **Financial Analysis.**
- **Life and Pensions Mathematics.**
- **Insurance Accounting. Pension Fund Accounting.**
- **Practical computing.**

4. SPANISH EXPERIENCE.

I suppose that the same has been the case in other countries, but in Spain we have had a longstanding debate on the role which actuaries should play…or…better put…could play… in defined contribution plans. In the end, what was questioned was the actuary's capacity to handle all the training we have had and apply it to the context of analyzing the risks inherent to the defined contribution model.

In Spain this debate led to a situation in which, for several years, during the tracking and review of pension plans and funds, when the model was one of pure defined contribution the need for an actuary's presence was even denied. This negation of our professional

capacity came not only from the public authorities charged with seeing to the proper oversight of complementary social security models, but also from a sector of the entities managing pension funds.

Defined contribution in Spain may be divided into two major blocks: pension plans, with which there exist contributions both by the company and, at times, the employee, encompassing cases of both death or disability and, fundamentally, retirement, given the number of people who reach this contingency. This would be the pure defined contribution model.

But in Spain there are many pension plans which are in reality mixed, that is, in addition to the defined contribution for all contingencies, they feature benefits for the coverage of death or disability. In most cases the defined contribution functions as a deduction and as a minimum guarantee of funds to be received. This means that the capitalization fund constituted in defined contribution, the result of the investments, is going to subtract from the risk coverage, thereby defining the capital at risk which will be the defined benefit to be assured, and in most cases this will be done externally.

5. LEGAL CONTEXT: the role of the actuary in general.

First, let's take a look at a few definitions in order to provide some context regarding the actuary's role in pension plan systems:

- A pension plan has a number of personal components: The company promoting it is the "promoter;" the employees are called "participants"; and the "beneficiaries" are those who receive benefits in the event of the different contingencies: death, disability and retirement.

- Since 1995 the implementation of companies' pension commitments cannot be carried out through internal funds, save in a few exceptions which have barely been used, such as in the financial sector, as the responsibilities which were previously assumed by internal funds have almost entirely been transferred to pension plans, mutual benefit societies and collective insurance.

- The pension plan is a contract; the pension fund is a kind of patrimony.

- All pension plans have a control commission made up of representatives of the promoter (company) and the participants (employees). Mutual benefit societies also have a similar body, but collective insurance plans do not.

The status of these regulations is both legislative, with the necessary Parliamentary approval, and governmental, with the development of the different legislative regulations.

This has been addressed through different clarifications and responses which the General Insurance and Pension Funds Authority (DGFSP, in Spain) has provided to different inquiries.

It is with pension plans where the role of the actuary in defined contribution is precisely regulated, while in collective insurance and in mutual benefit societies, in most cases what is regulated are defined contribution commitments.

The actuary's role in the law is covered in Article 9.5:

> ***The financial and actuarial system of the plans is to be reviewed at least every three years by an independent actuary*** *designated by the control commission, expressly charged with carrying out the actuarial review.*
> ***If, as a result of the review, the need or advisability of introducing changes to the slated contributions and benefits, or to other aspects impacting financial-actuarial performance*** *is determined, a control plan will be submitted to the control commission so that it may propose or agree to the response which it deems appropriate.*

Here there is no distinction between defined contribution and defined benefit, and the need for the actuary to be involved with the pension plans, for their overall review, is clear and categorical. That is, not only with regards to the components which are traditionally classed as "actuarial": contributions and benefits, but also – and this is the key point – in the financial oversight of the pension funds' management, or what has come to be called "financial aspects."

In addition, the Law assigns the actuary an important role in those aspects related to a pension plan's capacity to be modified as a consequence of the actuary's work. Thus, it is said that the "result of the review" may "include the need or the advisability of introducing variations in the contributions or in the benefits slated," but also regarding "other aspects impacting financial/actuarial performance."

The actuary's role here, covered under the Law, is stipulated in the regulations which implement it, where in Article 23

> ***RD 304/2004. Article 23***
> *The financial and actuarial system of the plans is to be reviewed at least every 3 years, with* ***the necessary involvement of an independent actuary*** *and, where called for,* ***other independent professionals*** *who may be necessary to carry out a* ***complete analysis of the pension plan's financial and actuarial performance****.*
> *The professionals who participate in the review are necessarily to be persons unrelated to the actuary or to the experts involved in ordinary operations.*

Here, his role is specified more precisely, as he is identified as responsible for the review of contributions and benefits, along with financial management, regardless of whether he has to collaborate with "other professionals" on his work - professionals who, along with the actuary, are to be "independent" of the managing entity or insurer's pension plan (of the participants, beneficiaries or company).

It is also stated that "the professionals who participate in the review are necessarily to be people apart from the actuary or experts who participate in ordinary operations." In this way the "appointed actuary's" role is separated from that of the actuaries who participate mainly in the management or daily administration of the plan or pension fund, especially as specialized employees of the company, in the managing entity or the insurer.

Also in Article 33, it deserves a look

> ***RD 304/2004. Article 33***
> *If, as a result of the review, the need or advisability of introducing changes to the slated contributions and benefits, or to other aspects impacting financial-actuarial performance is determined, a plan will be submitted to the control commission so that it may propose or agree to the response which it deems appropriate.*

The actuary's role was reinforced the moment Article 24 of the regulations stated that a pension plan may end up revealing "the manifest impossibility of carrying out the necessary changes resulting from the review."

> ***RD 304/2004. Article 24. Termination of the Pension Plans***
> *1.d) Due to the impossibility of carrying out the necessary changes called for by the review of the plan, in accordance with Article 23.*

But **the actuary's role in defined contribution systems is more clearly defined in the oversight of the investments specified in Article 69.4** of the regulation, where the GENERAL PRINCIPLES OF INVESTMENTS are dealt with.

> ***Article 69.4. GENERAL PRINCIPLES OF INVESTMENTS:***
> ***"The Pension Fund's control commission, with the participation of the managing entity, shall elaborate in writing a comprehensive declaration of the principles of its investment policy.***
> ***Said declaration is to be sufficiently publicized and make reference to questions such as the methods to measure the risks inherent to the investments, and the management processes of said risks, as well as the strategic placement of assets with respect to the nature and duration of its commitments.***
> ***It is to be reviewed when there are significant changes to it and, in any case, as a result of changes to be made in response to the conclusions of the financial/actuarial review****".*

Here, the following issues are specifically addressed:

- The pension fund Control Commission, that is, the representatives of the pension plans: company and employees, along with the managing entity, must make a public declaration of the "principles of their investment policy."

- These principles are to contain at least three points: (a) strategic placement and risk control management processes (b) the control processes for said risks and (c) the measurement methods of the risks inherent to the investments.

- These principles are to be changed in two cases: (a) logically, ‘‘when there are significant changes’’ and (b) obligatorily, ‘‘as a consequence of the conclusions of the financial/actuarial review.’’

This block places the actuary at the heart of the financial management review, not only in the case of defined benefit systems, but particularly with defined contribution ones.

The actuary is called upon to proceed with a comprehensive, global view of the aspects at play in a given plan or pension fund, and apply everything he has learned, not only with regards to financial and actuarial mathematics, but also in the analysis of cash flow.

6. LEGAL CONTEXT: the role of the actuary in particular.

Let’s take a look at the content and development of that detailed review for defined contribution systems. This means that we have to go to the content of Article 23 of the Regulation.

In the first place, we have to examine the “actuarial aspects” as they appear in Spanish legislation:

‘‘The review of the actuarial aspects shall include at least the following information:

A) *Description of the plan’s fundamental aspects*

This has to do with the legal analysis of commitments by pensions and the clear distinction between defined benefits and contributions, and between obligations and rights.

B) Information on the group evaluated:

Demographics, comparative analysis with respect to previous databases.

C) Actuarial methodology:

The actuarial methodology employed is to make sense with regards to the defined benefits components associated with the defined contribution model in the case of coverage of benefits for death or disability, with complementary guarantees for defined contribution capitalization funds, and in its analysis of the contributions made and the benefits linked to the evolution of the pension fund.

D) Hypotheses used:

The defined contribution systems which will allow us to evaluate the associated defined benefit (death or disability) commitments, mainly flows of contributions and benefits.

E) *Analysis of the contributions, benefits and economic and consolidated rights.*

Here the actuary's role is clearly expressed in defined contribution plans, with global content from the model's essence: what is contributed and what is received.

F) Results and analysis of the actuarial evaluations:

These will have to do with the complementary benefits which there may be in defined benefit systems, but also with flows.

G) Analysis of the plan's standing account:

This will permit us to link the actuarial aspects with the financial ones.

H) Analysis of the plan's solvency:

Until present this section was associated with defined benefit systems, but in the new context of European legislation being drafted, it may have to be applied to defined contribution.

I) Projections made until the next actuarial review:

These will have to be based on population analyses, with probabilities of survival, and assets and beneficiaries, to determine the flows of contributions and benefits, thus yielding a view of net cash flows.

J) *Conclusions and Recommendations*

Let's remember that the conclusions of the actuarial review may determine potential obligations to modify the pension plan, to be agreed to by the plan's control commission, or changes in the investment policy.

We begin with the stance taken on what the review of the financial aspects entails:

The actuary, in defined contribution systems, is to take into account the OBJECTIVES which the control commission has set for the investment strategy adopted. Here we will see the link between this Article 23, and Number 69, which we presented in a previous page.

The regulation continues:

A) Basic criteria of the investment policy set by the control commission.

This is precisely the content of Article 69: strategy, management and control.

B) Characteristics of the assets which make up the portfolio.

The actuary is to analyze, personally or with the professional team proving necessary, the entire investment portfolio, even examining and evaluating the legality of the investments in question. We will later see examples.

C) The establishment of benchmarks which reflect the investment policy and strategy.

We are dealing here with the review of the investments' management and, as such, we're in a subsequent phase. As a result, this "establishment of benchmarks" does not necessarily involve the indexes which the pension fund fixed to measure the investments' management. Rather, the actuary is to analyze what "policy and strategy" the pension fund has in order to see which benchmarks best reflect what and how they have been managed.

D) Analysis of possible deviations from the benchmark indexes.

This has to do not only with looking at it quantitatively, but especially qualitatively, as conclusions may be drawn here to modify the investment policy and its handling.

E) Asset management and distribution policies based on profitability and risk criteria. The adjustment of these policies in accordance with the objectives and characteristics of each plan.

We once again look at the objectives and characteristics of the plan in order to see if the management of the investments and tactical distribution pursued concurs with what the control commission initially defined.

F) Analysis of the investments' sensitivity

The issue of sensitivity calls upon us to apply our knowledge of Economics and Macroeconomics, of economic cycles as a force driving History, and, in my humble opinion, not just mere games with numerical calculations, as we might be tempted to.

G) The analysis of the portfolios' duration and the compliance with time frames with respect to each plan's obligations.

It is often said that everything can be bought and sold, but the question, in my opinion, is when and for how much. Thus, in addition to the actuarial analysis of

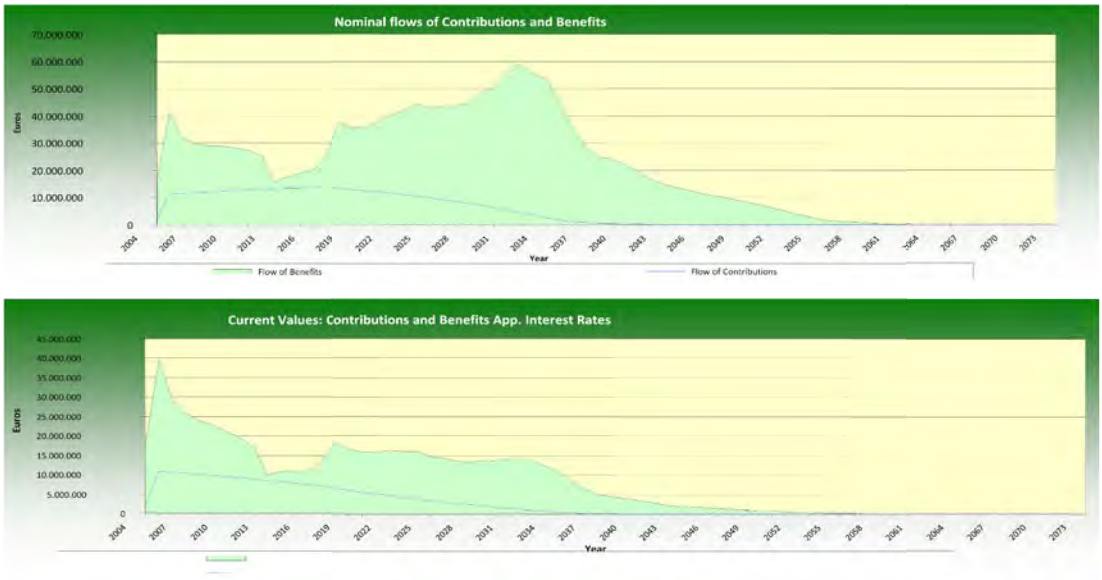
the flows of contributions and benefits, this section should include the economic cycles and the different scenarios which may arise with relation to the obligations and rights of the pension plan, the strategic investment portfolio and its practical management.

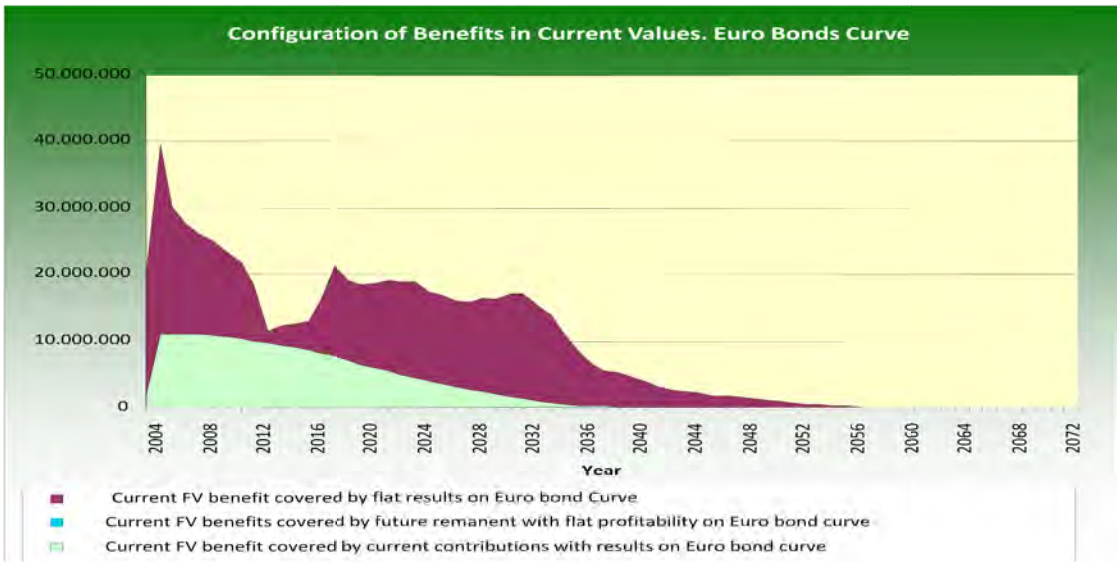
7. OBJECTIVES IN THE PENSIONS PLANS: the collectives.

Thus, OBJECTIVES serve as a "totem" which spurs us to analyze the STRATEGIC PORTFOLIO as part of the financial review of the management of the pension fund's assets and, based on this, the proposal of measures for that portfolio.

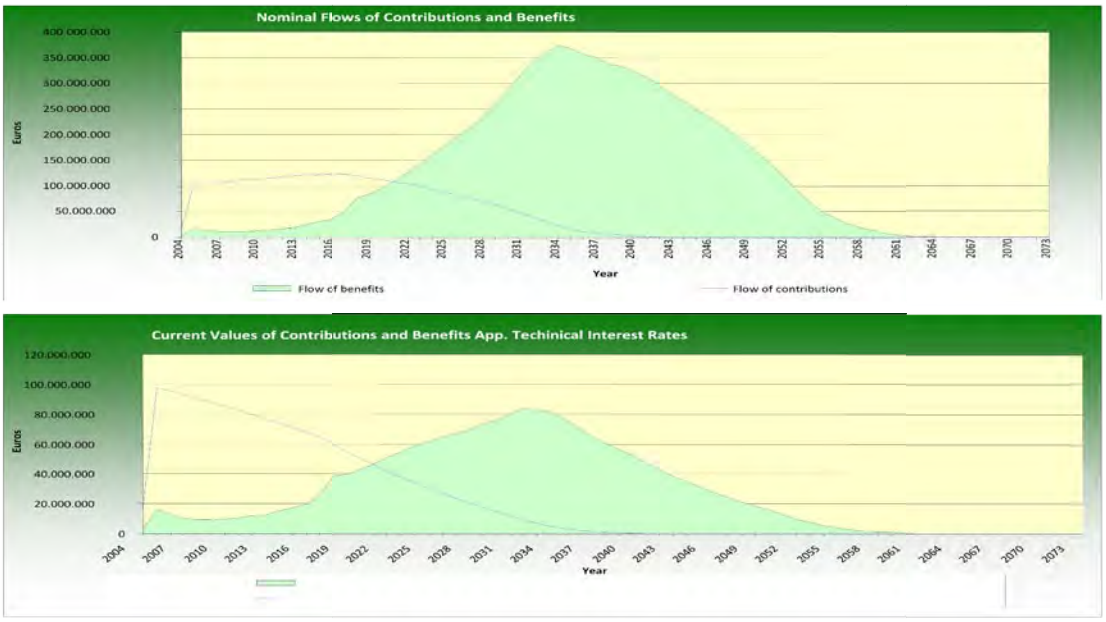
As we can see in the series of graphics which we shall proceed to present, the difference between two defined contribution pension plans with regards to their net cash can shape their investment policies.

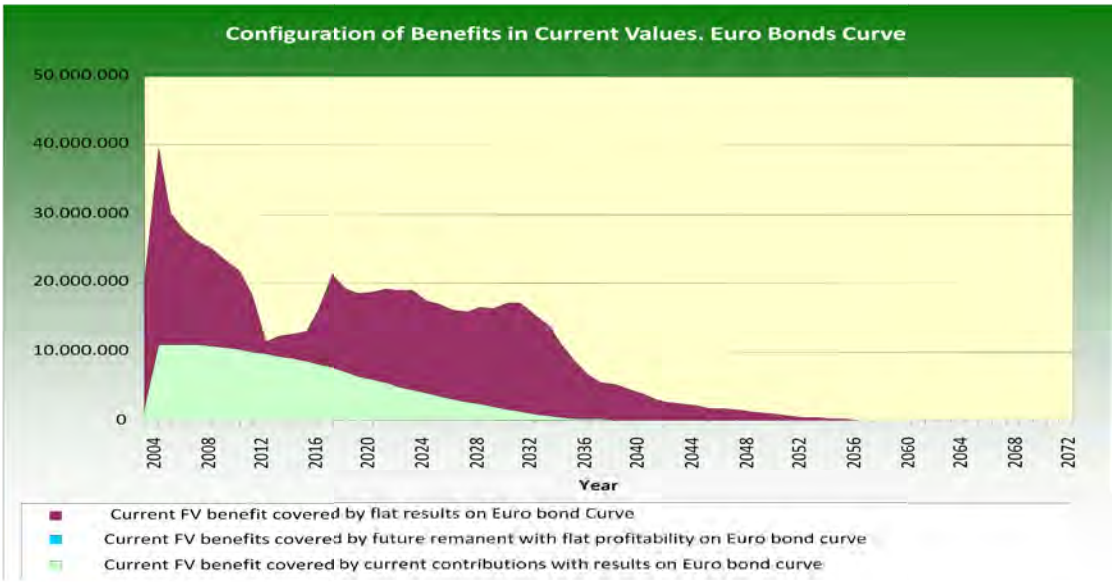
While in a pension plan we have a negative cash flow (contributions minus benefits)





In the other we have a positive one.





While in a pension plan we have to disinvest in an accelerated fashion in order to pay benefits and we may only reinvest in accordance with very specific time frames or through decisions to modify portfolio management.

In the other we have enough time to consider strategic assets in the long term, and we will have enough time to reinvest positive cash flows, as we have greater contributions than benefits. That is, we will apply the LIFO method in order to pay the benefits, and we will not fall into the absurd situation of selling portfolio when we can apply the net revenue of current contributions.

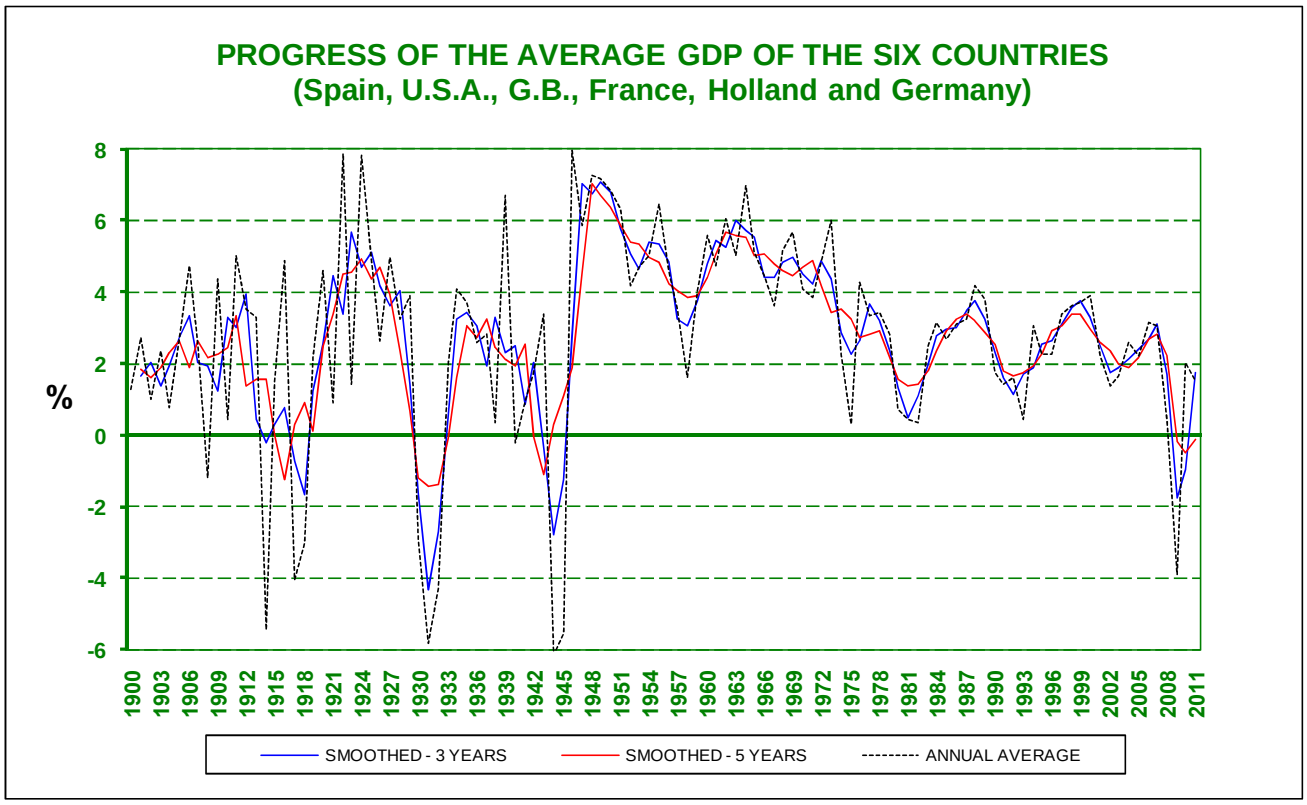
8. OBJECTIVES IN THE PENSION PLANS: the economy's cyclical.

We will have to consider what objectives the pension plan has set in the context of the economy's cyclical evolution.

We can observe how it is not enough for us to obtain the same profitability, as differences in salary trends also impact results. Therein lies the importance of the relationship between the profitability obtained and salary trends; we can obtain greater profitability and arrive at the same relative point of accumulation, or obtain the same profitability and accumulate less.

The objectives have an important relationship to the capitalization fund/salaries quotient. We cannot forget that we are dealing with the payment of benefits, and not just what kind of profitability we have obtained. This relationship is often forgotten and we fall into fallacies such as "maximum profitability with the minimum risk." This equation, as it features two variables, will yield infinite results. Rather, personally, I would tend to endorse obtaining the "necessary profitability" for the objectives of the pension plan.

The objectives are also closely related to considering the importance of economic cycles as forces driving History.



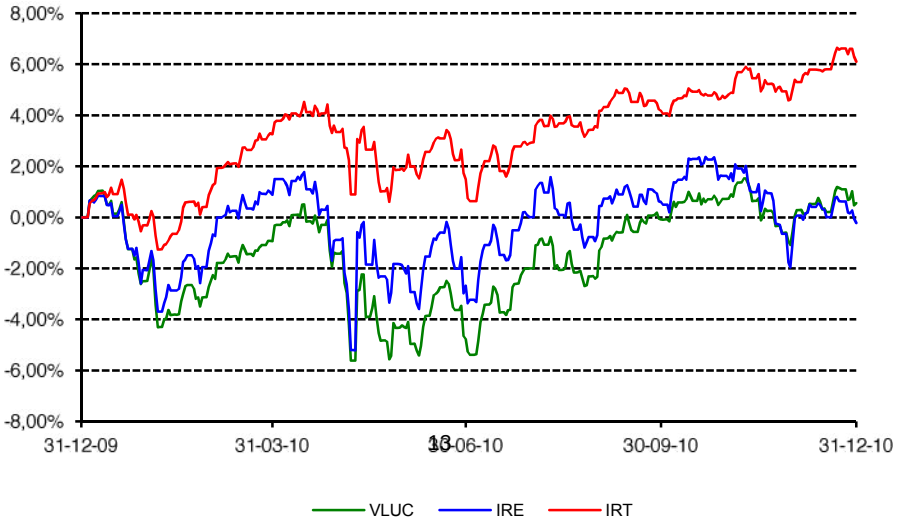
The updated graphics which we will look at now were presented, with the data then available, in Edinburgh, Hong Kong, Tokyo and Cape Town, and previously in Buenos Aires, Lisbon, Madrid and Rio Janeiro.

9. THE NEW GENERATION OF ACTUARIES.

As our time is limited, I will not be able to explain all the matters, which I have placed as an example of what an actuary may do in defined contribution systems in the area of investment monitoring.

We will focus on three in particular:

- **An analysis of strategy and tactics in order to study the result of the pension fund's evolution.**



- **The analysis of the legality of the investments, conceived as different conditions which the portfolio's assets are to meet in order to be considered apt for the management of pension funds in Spain.**

- **Financial assets and instruments susceptible to generalized and impersonal traffic, negotiated in regulated markets, derived instruments negotiated in organized markets, bank deposits, credits with mortgage guarantees, real estate, Investment Fund Real Estate Groups, Investment Fund (Excluded from Free Investment)(> 70%)**
- **Investment in assets or instruments issued by the same entity,except deposits, except deposits (<5%)**
- **Notwithstanding the previous limit, it shall be 10% for each emitting entity if the sum of all those exceeding 5% is less than 40%.**
- **Investment in various companies of the same group (<10%)**
- **Financial assets or instruments not admitted for negotiation in regulated markets, or which are not susceptible to generalized and impersonal traffic (<2%)**
- **Financial assets for instruments not admitted for negotiation in regulated markets by companies of the same group (<4%)**
- **Investments in Investment Fund of a financial nature which qualify under the 70% limit, in a single Investment Fund or various managed by one Managing Entity. (<20%)**
- **Investments in Investment Fund of a financial nature which do not qualify under the 70% limit, in a single Investment Fund, or in various managed by one Managing Entity (<5%)**
- **The investment in financial assets or instruments emitted or backed by the same entity, the positions before it in derived instruments and deposits which said entity or group may have (≤20%)**
- **NO: Investment in equities/bonds issued by entities of the same group of the promoter of the Plan or integrated within it (<5%)**
- **Investment in securities issued by an entity may not exceed in its nominal value all the assets or financial instruments in circulation by <5%; in the case of the Investment Fund by 20%; and in the case of public issues, 10%.**
- **Investment in real estate, mortgage loans and real estate rights, stocks and participations of real estate Investment Funds for Real Estate companies not admitted for trading in regulated markets (<30%)**
- **The previous limit shall be 10% in the case of a unit of real estate, mortgage loans, real estate rights, stocks or share capital participations in a company, and 20% in the case of an Investment Fund.**
- **(<20%) Investment in assets or participation issued by companies or Venture Capital funds subject to Law 25/2005 (<20%)**

➢ **The attribution performance by management type.**

	Rendimiento Absoluto	Rendimiento sobre PTM	TIR por Clase de Activo	Patrimonio Medio por Clase de Activo	Peso	Saldo a 31/12/2009	Saldo a 31/12/2010
Renta Fija	**47.168.636**	**1,30%**	**3,09%**	**1.551.855.364**	**42,87%**	**1.822.642.231**	**1.753.384.077**
Directa	28.485.784	0,79%	2,02%	1.424.127.713	39,35%	1.491.305.410	1.352.357.341
I.I.C.	29.565.211	0,82%	21,91%	149.015.437	4,12%	102.813.802	183.162.644
Notas Estructuradas	8.194.123	0,23%	3,69%	225.854.339	6,24%	228.523.018	217.864.092
Opciones	-358.925	-0,01%				0	0
Futuros	-18.717.556	-0,52%	-7,75%	-250.670.855	-6,93%	0	0
Swaps		0,00%	0,00%	0	0,00%	0	0
Renta Variable	**-32.007.818**	**-0,88%**	**-2,97%**	**1.060.588.202**	**29,30%**	**294.957.765**	**376.699.760**
Directa	-17.462.205	-0,48%	-6,70%	251.872.511	6,96%	250.801.120	222.417.012
I.I.C.	8.880.839	0,25%	12,78%	73.787.173	2,04%	14.802.046	120.506.396
I.S.R.	3.872.121	0,11%	16,85%	24.838.560	0,69%	22.975.424	26.850.064
Opciones	17.763.278	0,49%				6.379.176	6.926.287
Futuros	-42.676.462	-1,18%	-5,79%	715.417.828	19,77%	0	0
Swaps	-2.385.389	-0,07%	-81,24%	-2.936.371	-0,08%	0	0
Inversión Inmobiliaria	**-1.249.863**	**-0,03%**	**-0,94%**	**132.334.137**	**3,66%**	**133.443.462**	**130.980.775**
I.I.C.	-4.807	0,00%	-0,01%	43.683.342	1,21%	44.358.955	42.721.775
Sociedades	-1.245.056	-0,03%	-1,39%	88.652.514	2,45%	89.084.506	88.259.000
Gestión Alternativa	**-731.376**	**-0,02%**	**-0,85%**	**85.694.560**	**2,37%**	**94.073.175**	**73.523.657**
Hedge Funds	2.988.337	0,08%	7,60%	40.780.250	1,13%	52.937.887	31.627.107
Retorno Absoluto	899.869	0,02%	2,19%	41.506.887	1,15%	41.135.288	41.896.550
Volatilidad	-4.619.582	-0,13%	-64,43%	4.276.767	0,12%	0	0
Capital Riesgo	**18.838.121**	**0,52%**	**15,15%**	**133.451.986**	**3,69%**	**113.861.035**	**154.941.764**
Materias Primas	**31.989.913**	**0,88%**	**21,95%**	**160.967.721**	**4,45%**	**1.539.776**	**0**
I.I.C.	71.113	0,00%	4,67%	1.558.008	0,04%	0	0
Opciones	-1.663.739	-0,05%				1.539.776	0
Futuros	23.141.475	0,64%	26,11%	99.526.197	2,75%	0	0
Swaps	10.441.063	0,29%	19,06%	59.780.654	1,65%	0	0
Divisas	**-33.867.987**	**-0,94%**				**0**	**2.098.002**
Directa	5.150.328	0,14%				0	0
Opciones	1.497.226	0,04%				0	2.098.002
Futuros	-40.500.191	-1,12%				0	0
Swaps	-15.350	0,00%				0	0

10. SPANISH TRENDS.

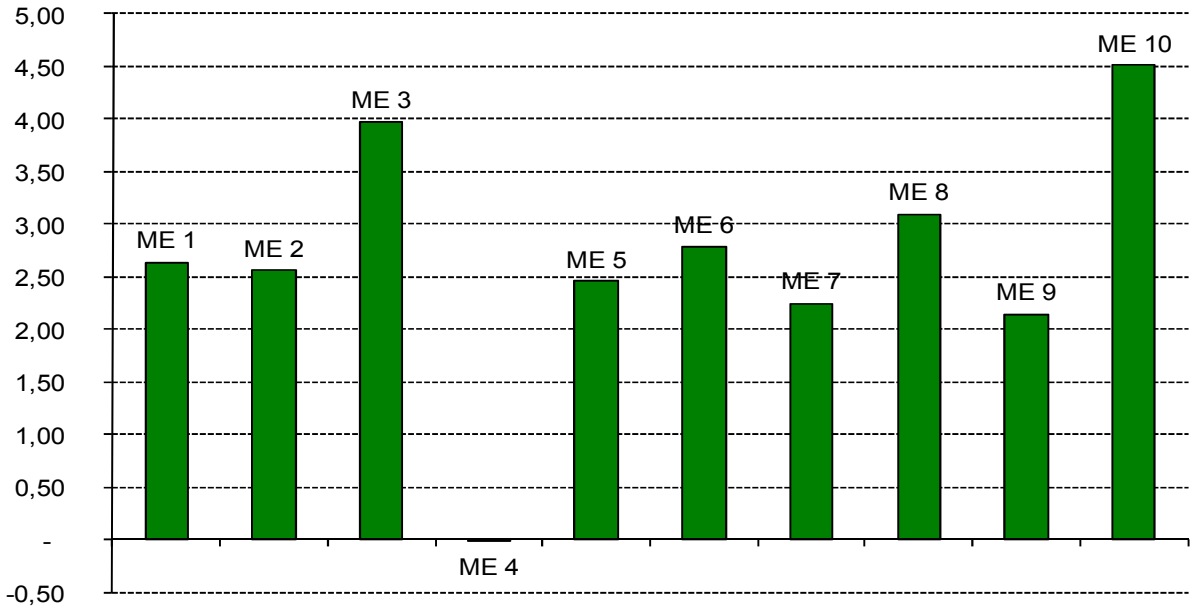
Let's take some data. We will start with the profitability trends in pension plans in Spain since their start in 1990.

On the one hand we will look at the individual models, and on the other, collective models (including those termed "associated," related to professional groups).

We can compare with the CPI to see the economic results; if we demand a financial result from this, i.e., at least two points above the economic result, we see that most individual plans not only have a yielded a negative economic outcome but also a negative financial outcome as well.

If we take some of the largest pension plans and compare them, we see that the result has not been very positive.

If we examine the main pension fund managers and their average performance in recent years we find the following results, where some have even had some downright awful results.



ME: MANAGEMENT ENTITY

This is why we ought to go back to the basics, the goals these plans have had and those handled in the same way. There has been widespread management of the investments based on what each managing entity has chosen as a strategy or tactic, without distinguishing between the plans' particularities.

Can we really handle the aforementioned plans in the same way, when one has positive net cash flow and the other's net cash flow is negative?

11. ACTUARIES FOCUS ON EFFORTS.

In short, I think that actuaries should focus on efforts, in terms of defined contributions, on the following issues:

1. Legal analysis of the model's conditions.
2. Quantitative analysis of the variables involved: salaries, contributions, benefits, etc.
3. Definitions of financial objectives.
4. Financial strategy.
5. Financial tactics.
6. Information to participants and beneficiaries.
7. Institutional relations with supervisory bodies.

8. Actions to benefit society, contributions to increase benefits.

9. Transparency in terms of the economic interests which counsel may achieve.

10. Adequate training and ongoing preparation.

12. THE STRATEGY?: PRACTICAL CONCLUSIONS BASED ON OVER 22 YEARS OF EXPERIENCE.

- Political strategies not tailored to each client, but pure investment, pegged to the market, with a "spyglass" and "rear view mirror" approach.
- The rupture of all kinds of designs.
- Political rights ceded to the managing entity without oversight or supervision.
- Contribución negative as short-term fixed revenue investments.
- Fear of negative rates of return.
- No clear objective.
- "Maximum profitability with minimum risk" instead of "sufficient profitability."

13. TACTIC?: PRACTICAL CONCLUSIONS BASED ON OVER 22 YEARS OF EXPERIENCE.

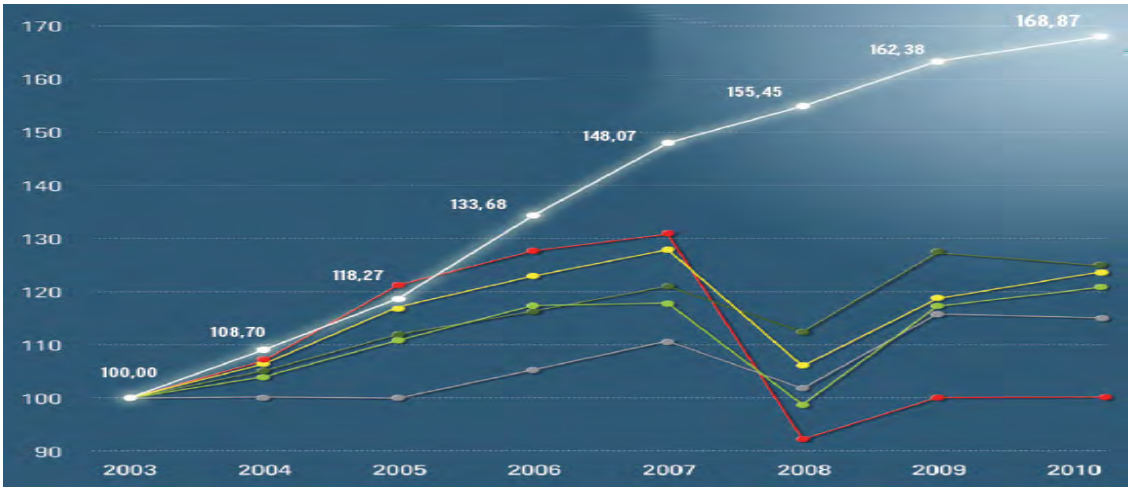
- The potential contamination of control commissions on tactics.
- In some plans the tactic is not known.
- In others the tactic blurs the strategy.
- In others the tactic is the strategy, designed as a market tactic, design from an index.
- The consequence of the dilution of market risk levels: "tacticism."
- The presentation of multiple tactics or one, aspiring for the control commission to get involved and share in the responsibility.
- Importance of the investment subcommissions: information/opinion/decision: (1, 1+2, or 1+2+3).

14. MANAGEMENT: PRACTICAL CONCLUSIONS BASED ON OVER 22 YEARS OF EXPERIENCE

- Participants who feel that "when we go up, we go up less, and when we go down, we go down more."
- Similar management models in almost all the plans of one manager.
- Without a management model which accounts for the plan's strategy and design, emotions of euphoria and panic.
- Multiple operations during the day.
- Daily management confused with strategy.

15. ONE DC MODEL WITH ACTUARIAL CONTROL.

Let's look at a model which has worked well, managed based on strategic objectives linked to achieving X points above the CPI, without thinking about "the maximum return with minimum risk" - which led to getting out of the riskiest investments when profitability slightly exceeded the objectives set, and there was no thinking about profitability which was going to grow exponentially and without end.



16. SOME REFLECTIONS.

It is worth it to stop and reflect. We believe that the "killing of innocents" which has occurred in recent, years, particularly in defined contribution, has been fair.

Our "mirror" should be the social security systems and not individual models, which are investment funds, with the risk that every investor wishes to run.

The aim of supplementary pensions should be to pay pensions that are sufficient.

To wrap up, let's go back to business cycles:

One may wonder if the return is dependent on age or economic cycles, and we may ask whether the models developed in recent years can solve the age and cycles problem. Personally, I don't think so.

We are dealing with compound capitalization. This is obvious. Influenced by the portfolios' evaluation criteria, this is also obvious. Thus, taking fixed income or short term positions when one is close to retirement does not necessarily make a model more stable.

The circumstances may arise, repeated many times throughout history that in this period is when it is most necessary to accumulate funds, as one did not have had a historical rate of return strong enough to be financially positive. We have seen the Spanish aggregates.

Rises in interest rates may adversely affect the outcome of short-term portfolios, and shifts in cycles may lead to misunderstandings by participants who are constantly comparing its performance with those of other employees in the same company.

In light of all the aforestated actuaries should equip themselves with adequate training as well as work with multidisciplinary professional teams, specifically covering three areas: legal, financial, and database management.

17. TWO CONCLUSIONES.

- Firstly, that the actuary should serve as kind of great orchestra conductor, working with professionals from other disciplines: economists, financial analysts, computer technicians, lawyers, group administrators, etc. to address the five different visions that converge in the world of pensions: stage of activity with death and invalidity, retirement stage and its derivatives, administrative management, financial management, and ERM.

- Secondly, the actuary should realize and appreciate how consequential his profession is and the degree of responsibility which it implies, as his work has an impact on society, affecting social welfare, in general, and that of employees in particular.

18. EXTRA THOUGHTS.

Finally, I would like to point out what I have been saying for many years at all of the conferences in which I take part: when it comes to investments, as in all fields of human activity, emotions play a much more important role than a simple, cold analysis of the portfolio.

Euphoria and panic are well-known drivers of change. In my view, human behavior is linked to our evolution over millions of years and our group behavior, ingrained into our cells.