

The points system

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Editorial

When setting up the executive pension scheme in 1947, French employers and trade unions opted for the use of the so-called "system of pension points" a system that most of the supplementary schemes established since, in businesses, agriculture and government service, have accepted. Some basic schemes, such as those for craftsmen and shop keepers, used it up until 1973 before shifting to a system of "annuities" favoured by the General Scheme. On the other hand, the basic scheme for the professions has decided to resort to the points system as the result of an August 21, 2003 reform.

For a long time, the technique did not attract much interest. But a national debate on reform of our pension system has succeeded in focusing attention on this aspect of pension management. In discussions leading up to adoption of the Law of August 21, 2003 on pension reform, one current of opinion was even in favour of a single basic scheme for the entire population based on points, vaunting the system's merits of flexibility, legibility and fairness.

The debate is not confined to France. During the same period, notional accounts made their entry into international discussions with reforms in Italy, Latvia, Poland and Sweden, reforms cited as examples by the World Bank. The new Swedish scheme, which resembles that set up by French employers and trade unions in 1947 for executive pensions, has become emblematic.

The aim of this letter is not to settle the debate but to shed more light on it. In the first part, the system will be described, along with its usefulness in managing pension schemes, taking the supplementary schemes of Agirc, Arrco and Ircantec as illustrations. The second part will be devoted to the expansion of the system in France and Europe.

What is a points system? Has it been confused with notional accounts? Are its merits intrinsic or do they stem from political choices that have put it to use. If the observations that follow allow the features that are inherent to the system and those that have been introduced by those who use it to be understood, it will have accomplished its objective.

INTRODUCTION

The points system compared to annuities

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In theory and contrary to schemes using annuities, which are based on defined benefits, a points scheme is based on defined contributions. For the latter only a system of contributions must be set up since the amount of pension is not determined in advance. The search for financial equilibrium in a points scheme consists of adapting costs to resources. On the other hand, schemes based on annuities are committed to providing a certain level of pension, something that calls for adjusting financing in terms of engagements.

Operating a points scheme

Every year, the contributions of actively employed workers are converted into points by dividing those contributions by the level of the “reference salary”^{*} of the year under consideration. This corresponds to the purchase price of a pension point.

Points obtained annually are cumulated throughout the contributor’s career. Upon retirement, the level of pension is determined by multiplying the total number of points accumulated by the service value of a point.

Example:

Each year for 20 years, the pension contributions of a worker are equal to €1,200. If the purchase price of a point is €12, the number of points acquired annually is $1,200 / 12 = 100$ points,

meaning that the worker will have accumulated 2000 points during his career. With a point worth €1.05 at the moment of retirement, the annual pension will amount to $2,000 \times 1.05 = €2,100$.

The purchase and settlement parameters for a points scheme are set annually. The instant ratio, i.e. for the conditions of the year under consideration, between the service value of a point and the reference salary corresponds to the annual amount of pension that a participant is likely to receive in exchange for a euro of contribution. This ratio is called “instant return” because it is not constant over time since it depends on the annual value of a scheme’s parameters, except if these vary within the same ratio.

A points technique allows a certain amount of flexibility in its implementation. It can be

^{*} The purchase price of a pension point is called “reference salary” because, in principle, it is raised in line with contributors wages.

used by pay-as-you-go schemes, such as Arrco, Agirc and Ircantec, as well as funded ones such as the new supplementary scheme for civil servants or those that are fully funded such as some L441 schemes*, in particular Prefon.

Point schemes by definition are based on contributions. The size of pension is closely linked to the contributions of a worker since it is proportional to the total number of points accumulated during membership in the scheme, thus reflecting successive rates of contributions and salaries for past activity. Contributions can be adapted though to include a certain degree of social solidarity with respect to selected social policies. For example, the allocation of “free” points (awarded without any paid contribution) during periods of unemployment or illness or an increase in pension in function of special criteria such as the number of children brought up.

A points scheme can also allow introduction of various degrees of mutualization. The instant return can be common to all of the members, mutualizing the overall characteristics of the member population differentiated according to age, life expectancy, length of contribution, etc.

Operating a pension scheme with annuities

In an annuities scheme strictly speaking, the sum of pension does not depend on contributions but on the duration of insurance validated by the scheme, the rate of annuity (which is a constant parameter and independent of paid contributions) and the last occupational salary.

*For example, the French pension scheme for civil servants awards rights of a level of 1.875%** of the last salary for each year of validated insurance, with a limit of 75% for an entire career*

(40 years). An insured member with 35 years of validated insurance can thus obtain a pension equivalent to $1.875\% \times 35 = 65.625\%$ of the last salary.

The size of pension is the same for identical periods of insurance and final salaries no matter what the career profile of a member is. Two pensioners thus benefit from the same size of allowance provided that they have identical periods of insurance and final salaries even though the first received regular promotions in comparison to the second who received a big raise during the final year of occupational activity.

A combination points scheme and annuity scheme: the special case of the CNAV

At the CNAV, the national retirement scheme for private sector workers, the amount of pension is calculated according to the length of insurance, the average salary and an annuity rate of 25% to 50% depending on the length of validated insurance. Although it relies on the length of insurance to calculate a pension, the CNAV cannot be considered as an annuity scheme strictly speaking since the amount of pension does not depend on the final salary.

On the other hand, this scheme tends to resemble a points scheme insofar as the average salary is based on an average of the 25 best yearly occupational salaries and the size of the salary subject for contribution determines the duration of validated insurance. The CNAV scheme can in this respect be qualified as “contributory” since the size of pension paid tends to reflect a chronicle of salaries for past occupational activity (capped salaries).

* Article L 441 of the Insurance Code provides a framework for insurance activities concerning life benefits.

** Annuity rate valid for 2008. The annuity rate will be lowered gradually to 1.8% by 2019.

PART ONE

THE INTEREST OF A POINTS TECHNIQUE

Piloting, fundamentals and remarks on pay-as-you-go retirement schemes using points

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Pay-as-you-go-schemes based on points offer their managers a variety of tools for intervening efficiently with annual adjustments to guarantee the continuity of their pension operations.

Over and above their role in financial piloting, the operational parameters represent the regulatory instruments that insure the solidarity, more necessary than ever, these schemes hope to establish.

Ensuring the continuity of pension operations for a determined future

Piloting a pay-as-you-go pension scheme depends upon achieving a balance between income and expenses up until a determined future which can be “annual”: this means ensuring for each financial year, the contributions necessary to finance the pensions of the moment, or “for several years” which means ensuring the continuity of operations over a certain period, accepting, for example, temporary deficits that are financed by the scheme’s reserves.

Long term actuarial surveys: a necessary basis of reflection for piloting

Actuarial surveys must be carried out in order to alert managers to changing prospects for resources and expenses, taking into account current regulations. Any new regulatory arrangement under consideration should be accompa-

nied by a financial evaluation in order to ensure that the scheme can adjust its operating parameters to meet any additional expense that is likely to arise.

It seems advisable to have tools at hand for managing the scheme’s technical performance for the short, medium and long term. Points schemes dispose of such tools by definition, thanks to their basic organization.

Providing tools suitable for achieving a technical balance

The procedures for acquiring rights for pension schemes based on points consist of purchasing units of pension rights in the form of points and, converting such points to monetary units at the moment of retirement. Each contribution allows in fact points to be purchased for which the unit price or “reference salary” is set each year. The contributor thus accumulates points throughout a career that confer a level of pension

in euros at retirement that has been determined annually. This level corresponds to the service value of a point.

The management of a points scheme relies on three readily identifiable operational parameters:

- the contribution rate,
- the purchase price of a point or reference salary
- the service value of a point.

These parameters, whose value is set yearly by the scheme's managers, represent so many tools for intervening in response to macro and micro-economic effects which can be immediate or deferred.

I. The contribution rate: a parameter for adjusting resources and acquisition of rights

This parameter is all too often forgotten, although basic to defined contributions schemes, for which the obligation applies only to the payment of contributions of participants and their employers, with no definite determination of the level of pension benefit.

A variation in the value of this parameter has an effect on the resources and costs of the scheme along with temporal consequences: a rise, for example, produces an immediate increase in the scheme's resources. In exchange, contributors are likely to obtain pension rights calculated on a higher basis that will in turn yield an increased number of points over the long term to be honoured upon retirement and thus a rise in costs of benefits.

The determination of this parameter is necessarily a result of a social consensus since it expresses the contributory efforts agreed to by workers and their employers.

II. The purchase price of a point: a parameter of intra and inter-generational solidarity for acquisition of rights

It represents the "exchange value" of two "currencies" composed of the pension point and

a monetary unit. On the other hand, unlike a standard currency, the "pension point" currency is convertible only upon retirement.

Any measure concerning the level of this parameter affects only rights remaining to be acquired and not those already acquired. Thus, from a micro-economic viewpoint, the effects of variations of this parameter on the rights of future beneficiaries are more and more tangible according to the time remaining before retirement. From a macro-economic viewpoint, the impact of this parameter on the costs of the scheme's benefits is gradual and depends on the amount of rights for the beneficiaries concerned by the measure in relation to their rights as a whole. The full effects of this parameter on the level of the scheme's costs will appear only when the youngest contributors retire.

The purchase price of a point actually reflects the solidarity the scheme is trying to promote. In this respect, it is interesting to record its initial level and to keep track of changes over time, since these two features correspond, in fact, to different sorts of solidarity.

II.1. The purchase price of a point reflects current solidarity

The purchase price of a point for a given year should be adjusted or not to the socio-economic factors that the scheme considers important. Several approaches may be retained:

The purchase price of a point can be the same for the entire population covered...

The scheme opts for an overall solidarity in which no distinction is made for the sectors of activity covered or the contributing generations or any participant. In this case, there is no age discrimination. The youngest and the oldest are treated the same, with the same system for acquiring rights.

... or increase in relation to the age of the contributor...

The principles underlying such a choice can be considered from either a macro or micro-economic viewpoint.

– A point acquired by an elderly contributor involves more “risk” for payment of a pension than that of a younger contributor who still has several years remaining before retirement. In terms of probability, the points of elderly contributors are more expensive for a pension scheme than those of younger ones. It thus seems advisable to reduce the difference of probable costs among generations with a purchase price adjustable according to age.

– On the other hand, a participant nearing retirement age has more desire than one who is younger for possessing points. Micro-economic rationalism also lends substance to proposing a purchase price for a point that is higher according to age.

... or depend on categories of personnel

This option allows taking specific factors into account such as, for example, strenuous working conditions. For a given contribution, certain categories of personnel engaged in strenuous labour might acquire more rights than those in categories where the work is less taxing. In other words, the more the work is strenuous the lower the purchase price of a point.

Considering these examples, the introduction of socio-demographic criteria in determining the price of a pension point proves to be no easy task. If populations are to be set apart, care must be taken to avoid opposing them in socio-professional, generational or sexual terms. It is only through consultation and cooperation that choices should be made.

II.2. Changes in the purchase price of a point reflects continuing solidarity

Several examples of indexing merit attention:

The price of a point indexed on the average contribution base...

The purchase price of a point is traditionally indexed to trends in the average contribution base for members of the scheme, in virtue of an equity principle that provides that for the same contribution rate, the active population of the moment, acquires, on average, the same pension

rights as the population of the previous accounting period.

In the case of salary-based contributions, the average contribution base increases automatically in relation to an overall increase in salaries. Thus two participants having occupied identical functions in two different periods will have, for the same rate of contribution, different contributory efforts in nominal terms. Indexing the reference salary to the average contribution base thus allows overall changes in salaries to be neutralised by attributing the same number of points.

... or to the price index...

The purchase price of a point is linked to changes in the consumer price index. The principle of solidarity among generations cited above is not primordial here. A pension point is considered as a consumer good whose change in price is comparable to that of the average household shopping basket.

... or other parameters...

Other indexes can also be used such as the average participant’s salary, a firm’s turnover..., or even the service value of a point. This last concept will be studied further on.

III. The service value of a point: a parameter of technical and social compromise

The service value of a point is the parameter that allows points accumulated each year up to the date of retirement to be converted into benefits.

A variation in the service value of a point has an immediate effect on a scheme’s liabilities and subsequently on its yearly balance sheet.

Through annual adjustments of its value, management of the scheme’s liabilities become more flexible.

In theory, the service value of a point can vary annually, upward or downward, depending on the scheme’s resources, with an effect of increasing or decreasing pensions, the scheme’s obligation being to honour the number of points and not their worth. Theoretically, this parameter has no

long term effect. In practice however, the social objective of upgrading benefits, at least in nominal value, requires, if resources permit, a rise in the service value of a point each year and subsequently triggers medium and long term effects on liabilities.

Thus the service value of a point has to reply to budgetary as well social constraints since it conditions the level of benefits a pensioner is likely to receive.

In this respect, there is cause to outline various “strategies” for setting the service value of a point.

A service value based on annually balanced accounts

This corresponds to a point value that aims at balancing resources and liabilities for a given year, which is the number one priority that comes to mind in a pay-as-you-go scheme; i.e. adjusting current benefits to the level of available contributions.

A point value that ensures an automatic balance for a scheme has the special feature, under certain conditions, of enjoying a relative equity between working contributors and pensioners. In fact, in the case of a stationary period where the worker/pensioner ratio as well as the average points of pensioners are stable in time, redistribution of resources implies an adjustment of benefits in function of changes in contributions. When contributions are based on salaries, the relative parity of pension/salary is maintained: pension recipients benefit from pensions in harmony with rises in salaries; their relative purchasing power is maintained in comparison with that of contributors.

In practice, such a relative parity in purchasing power between actively employed contributors and retired beneficiaries is only partial insofar as a stationary period is not reached: changes in the number of contributors may differ sharply from the number of beneficiaries, the average number of pension points may change in time along with the average length of contributions.

Moreover, this point value leads to erratic changes in pensions, since it tends to redistribute the total annual resources of the scheme which in turn are closely linked to the number of contributors and their average contributions, in other words to the economic situation of the moment, in terms of employment, economic growth and unemployment.

Taking into account the level of a scheme’s potential reserves and the possibility of balancing accounts over several years appears to be called for.

A service value based on balancing accounts over several years

This corresponds to a point value that is rounded off in a way that adjusts liabilities expressed in pension points to the level of the scheme’s resources over a specified period of time, after resorting to all or part of the scheme’s financial reserves.

It calls for defining the period of time to be retained as well as the level of reserves needed to meet income and liability forecasts.

The time period, the level of reserves and the macro-economic scenarios to be used for forecasts must be agreed upon by all of the scheme’s officials in order to arrive at a consensus concerning the findings of prospective actuarial studies and agree on a point value.

It constitutes a measure of the technical position of the scheme in relation to the macro-economic scenario retained. If its value is well above that of the effective service value of the point, it indicates that adjustments in benefits should be considered. If its value is much lower, it indicates that measures for finding a new equilibrium may be necessary.

A point value to guarantee purchasing power

The service value of a point is adjusted in relation to the consumer price index. The aim here is to preserve the purchasing power of beneficiaries.

Within a defined framework, the worker/pensioner parity is not necessarily maintained. In

countries like France where the average salary is structured to increase more rapidly than inflation, the relative equity is modified. Moreover, from a macro-economic point-of-view, such indexing is accompanied by an improved technical equilibrium when resources are based on salaries. Such indexing allows the scheme's reserves to be consolidated while maintaining pensioner purchasing power at an accustomed level.

A point value based on a targeted return

Here, the service value of a point is set in a way so that its relation to the reference salary converges at a level agreed upon by the scheme.

The ratio of the service value of a point to the reference salary is referred to as the scheme's return. It corresponds to the immediate benefit produced by one euro of benefit generating contribution.

The idea behind a targeted return is to agree on the level of benefit – produced by one euro of contribution – that a points scheme should offer.

Such a strategy leads to a determination of the trend in the service value of a point as well as that of the reference salary, with the intention of arriving at the scheme's targeted return. This is accompanied by efforts to achieve equilibrium over a period of time where the aim is to maintain purchasing power, which in turn involves a change in the reference salary.

The choice of the level of a targeted return is delicate and must be the result of a social consensus.

The effective service value of a point reflects a social consensus

What is at issue here is the point value actually decided upon by the scheme's managers. Such a value takes into account not only the scheme's financial prospects but also its basic objective, which is to provide a decent pension.

The actual service value of a point is thus a variable of a technical and social compromise based on macro and micro-economic factors.

It is an element for apportioning available resources for the benefit of present and future recipients with the aim of adjusting the scheme's income and liabilities through the formation or use of reserves.

For reasons which are socially evident, changes in the service value of a point should never be abrupt, a fact which implies searching for an equilibrium over a period of time.

IV. Determining the parameters of a pay-as-you-go points scheme involves a social consensus

We have examined the tools available for managers of pay-as-you-go points schemes – with respect to long term actuarial studies concerning trends in resources and costs – for solving the problem of equilibrium and assigning parameters through dialogue while establishing a solidarity that they are intended to promote.

When the scheme's technical parameters are determined, the macro-economic forecasts for income and liabilities must be accompanied by a study to evaluate the size of pension for all present and future recipients.

Piloting goes hand in hand with a concern for maintaining a social consensus.

In the private sector in France, the steering of the points schemes represented by Arrco and Agirc is handled by a joint committee of employer/employee representatives and is a guarantee of the common interest and stability of the scheme. Their mission is in the general interest and involves not just paying current and future benefits but also ensuring a social consensus of active workers, companies and pensioners.

Limiting the piloting of a scheme to purely technical aspects would ignore the fundamental pact binding the participants.

The example of Agirc and Arrco: a system for the use of the Social Partners

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Adopted by the inventors of the supplementary scheme for executives, the points system has been used by the social partners to manage the Agirc and Arrco supplementary pension schemes since 1947. The history of these two schemes provides a practical guide to the use of the system.

The post War period and the “Golden Thirties”

Must we recall how different the context was from today when the supplementary pension schemes were created, Agirc in 1947 and Arrco in 1961. Inflation was rampant since the First World War and savings and investment income were decimated. A drop in the birth rate and the effects of two wars had left a reduced population to face the task of reconstructing the country. Life expectancy at 60 was low, with progress mostly concerning infant mortality. The retirement age for most workers was 65, with many continuing to work longer, especially executives.

Protecting pensions from inflation

For tackling inflation, the points technique, along with pay-as-you-go financing, would prove itself to be incomparably efficient. Maintaining the purchasing power of pensioners in an era of ruined savings was already a highly ambitious task. Careers were reconstructed in a way to allow pension points to be obtained, based on a purchase price (known as the “reference salary”) whose adjustments were determined in function of inflation since 1914. Before this date,

the purchase price remained the same no matter what year was under consideration. In fixing the value of these points each year, the social partners’ avowed aim was to compensate for inflation.

Sharing the rewards of growth among active workers and pensioners

Such adjustments were made possible by an expansion in the number of wage earners, unimagined in 1947 and of boom proportions in 1961, and by an increase in wages superior to inflation. Concern for protecting the purchasing power of pensioners was soon to give way to a much more nobler ambition, helping them to “benefit from the fruits of growth”. In addition to creating new rights, widow and widower pensions, increased benefits for children, the manner of fixing the point value lent itself to the task. It simply had to be pegged to the rise in salaries.

Avoiding contributions for inflation

After some initial years of experimentation and testing, and with an eye toward long term management, the social partners developed a for-

mula for calculating the value of an Agirc point. The value retained each year would be that allowing a balance of liabilities and resources over the ten years to come, including reserves. The Law obliged the social partners to invest at least half of such reserves in government borrowings or government-guaranteed borrowings, with very low yields. In theory, this was considered as a measure to minimise risk, but in practice was a way of financing government policies at low cost and reserves tended to depreciate in relation to the growth in salaries and pension rights. Was it really necessary to maintain such unprofitable investments? The question was resolved, not without debate, by using contribution rates. The social partners decided to limit reserves to around one year of benefits and consequently to call for contributions at reduced rates, known as “call rates”, with accumulated points continuing to be calculated at the “contractual” rate. It was taken for granted that the call rate could be increased if the situation was reversed. Thus the equivalent of two years of contributions were not “called” in the 50s and 60s to the benefit of actively employed executives and companies and to the indirect detriment of State financing.

The 1973 oil crisis and the change in economic prospects

The first oil crisis put an end to thirty years of exceptionally strong and sustained economic growth. For France especially, this marked the end of full employment and the beginning of massive unemployment. Although the native population of working age is still rising, a consequence of the baby boom, and immigration continues, the number of real jobs is barely

higher than in 1973. But no one, least of all the social partners, can imagine such a prospect over the long term. Moreover, since 1964, the fertility rate has actually dropped but the overall population continues to expand thanks to the effects of the baby boom. Since the War, life expectancy has gone up, especially for the elderly, a phenomena long underestimated by demographers. Lastly, thanks to the development and improvement of pension schemes, pensioners are far from being the poorest elements of French society as they were immediately following the War but the impression remains and the change has not been taken fully into account.

Maintaining the purchasing power of pensioners

Already in 1977, the formula used by Agirc for calculating the value of a point led to an adjustment of the Agirc point that was below inflation, a break with the thirty years preceding the victory over inflation and improved purchasing power. With the expectation of a return to better economic conditions, the social partners decided not to pass on the entire effects of a drop in employment. They decided to temporarily ignore the formula for calculating the value of a point they had previously agreed to. They knew though that the 1980's would see the arrival of generations having completed full careers during the Golden Thirties at retirement age at a moment when the pace of growth of resources would be slowing. So they opted for a policy of moderate adjustment in point value that was aimed merely at maintaining purchasing power.

The service value of a point, a variable of a technical and social compromise: an example of the arbitrage carried out by Agirc in 1978

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In 1946, when the founders of the supplementary scheme for executives (Agirc) opted for a points system, they also decided that the annual value of a pension point should be determined in a way to maintain an annual balance between a scheme's resources and expenditures. This principle was respected up until 1950 when the original wording of the article defining the formula for determining a point was modified to permit the balancing to take place over a ten year period. From the outset, the organizations signing the Convention conferred authority to the board of directors of Agirc for fixing the annual value of a point according to the formula. This formula could lead the social partners running the scheme to increase or decrease this annual value in order to adjust expenditures to resources.

After serving for thirty years, the formula for determining the value of a point was eventually called into question in the mid-70s, as a result of changes in resources and costs. From this period on, the executive pension scheme, much more than other schemes, suffered from a slowdown in economic growth and a consequent drop in salaried employment, as well as from the combined effects of a sharp rise in the Social Security ceiling over the fifteen preceding years and an increase in costs due to the arrival of the scheme at maturity. The scheme registered in 1977 a drop of 5.96% in resources in comparison with the previous year, while the ten year forecast indicated a 3.86% increase in costs. In such conditions, the value of a point, calculated according to the formula, stood at 0.8925 francs, representing an average yearly increase of 7%, which was less than the rise in the cost of living (9.4%) and implied a sizable drop in purchasing power. The Board of Directors was confronted by the following alternative: either the value of a point would respect the formula fixed by the Convention or it would allow pensioners to maintain purchasing power.

Opting for the second solution, the Board of Directors decided to fix the service value of a point at 0.91 francs as of July 1, 1977, in other words, a rise of 1.96% in the calculated value, in dissociating it from the "official service value" (qualifying this as a "technical value"). Such a measure represented a fundamental change in the way the rules had been applied since 1947 and was adopted by the board of directors. The Board also agreed to maintain the formula as described in article 37 of appendix 1 to the Convention and to conserve "the technical value of a point" as a rough indicator although dissociating it definitively from the "service value of a point". This would be indexed on either the average executive salary or the cost of living for a given accounting period, whichever represented the lesser variable.

According to studies carried out at the time, maintaining the purchasing power of a point would lead to the total depletion of reserves within fifteen to eighteen years and maintaining the level of reserves (three-quarters of yearly benefits) would lead to a 50% reduction in the purchasing power of a point within ten to fifteen years.

Increasing the resources of schemes

However, financial equilibrium was maintained mainly by an increase in resources and this thanks to a rise in the call rate for contributions which allowed contributions to be raised with no additional attribution of pension rights.

At Agirc, the call rate, had been pegged at 100% since 1966, in other words equal to the so called contractual rate which serves as a reference for calculating pension points each year. The social partners raised this to 103% in 1979, 106% in 1986 and 110% in 1987. It

reached 125% in 1995 and has remained at that level since.

Raising external resources

Already in 1967, the social partners, in posing the principle of attributing pension points for periods of unemployment with compensation, expected help from the unemployment insurance administration for financing. This measure attenuated the impact of unemployment on the supplementary retirement schemes. However, in 1982, with the endorsement of “retirement at 60” in the basic scheme as well as those for farm workers, shopkeepers and craftsmen, the equilibrium of the Agirc and Arrco schemes was upset. Politically speaking, the social partners could hardly oppose the reform and continue to apply reductions for supplementary pensions requested at 60. Moreover, the newly accepted retirement at 60 took over from a formula for early retirement, the “income guarantee”, which was more generous in several aspects, and became financially unsustainable for the unemployment insurance administration. A solution was found by setting up a financing organisation, the ASF (“*Association pour la Structure Financière*”) which was charged with the task of financing the cost of the income guarantees as well as the additional expenditures for “retirement at 60” in the Agirc and Arrco schemes. The ASF was initially financed by a State subsidy and two points of unemployment insurance.

The drop in payrolls in 1993 and the search for long term equilibrium

In 1993, for the first time since the War, the nation’s payroll contracted due to a drop in economic activity. The number of contributors to the unemployment scheme, whose size is roughly similar to that of the Agirc and Arrco schemes, decreased by 1.7%. The amount of salaries subject to contributions went down by 0.4% in comparison to the increases of previous years

(3.9% in 1992 and 4.3% in 1991). Such figures were a shock, speeding up recognition of a context durably different from that of the years during which the schemes were developed. The agreements of 1994 and 1996 demonstrated a change in thinking.

Putting some “acquired” rights in question

As of 1994, the social partners had to adopt measures to re-establish financial order in the executive scheme, made all the more difficult since its contribution base was reduced by a rapid rise in the Social Security ceiling. A consensus was found for “sharing sacrifices” between those who paid, executives and their companies, and those who received, pensioners. The contributions of the first rose thanks to a new increase in the call rate and the minimum mandatory contribution rate. The second found the value of their point frozen, in other words, the non-adjustment of their pension and a reduction of bonuses for children by the establishment of a percentage of payment.

Moreover, the European principle of equality between men and women was applied in a way to ensure savings: survivors benefits for women were postponed from 50 to 60 years old in order to equalize with survivors benefits for men lowered from 65 at 60 years old (except in cases of disability or dependent children)*.

The intention of the social partners was to influence future pensioners as well as those whose pensions had already been settled. They didn’t take into account the possibility of law suits. In the aftermath of several court decisions and appeals, the Supreme Court determined in 1999 that the “percentage payment” amounted to reducing the number of points, and that such a measure could not be applied to pensions that had already been settled. The social partners could have, it appeared, lowered the value of a point but they could not modify the number of points of a pension having already been settled.

* Arrco will equalize the age for widow and widower pensions at 55 in 1996.

The use of a point's purchase price

The Agirc agreement of 1994 was motivated by the necessity of re-establishing a financial equilibrium threatened over the short term. The aim of the Agirc and Arrco agreement of 1996 was to establish conditions for equilibrium over the medium term.

They made use of a group of savings and financing measures. But they broke new ground in one important way. For the first time, a lower number of points was attributed for the same level of contractual contributions. This was obtained by making the purchase price of a point higher than contributor salaries. From 1996 to 2000, the purchase price, which from the outset followed changes in salaries*, rose over each year by 3.5% for Arrco and 4% for Agirc. This was actually a long term balancing measure that confirmed a situation brought on by an increase in longevity, and thus in years of retirement, and that prepared for a rise in the number of pensioners with the arrival at retirement age of the populous generations of the baby boom. This decrease in the number of attributed points is compensated for, to a certain extent, by a rise in the minimum mandatory contribution rate, from 2.5% to 6% for Arrco and 8% to 16% for Agirc thanks to a series of agreements over the years.

With the joint Agirc and Arrco agreement of February, 2001, the social partners once again resorted to using the purchase price of a point, but this time to attenuate the effect of the previous measure. The purchase price of a point was temporarily pegged to trends in prices. Since these were inferior to trends in salaries, the effect was to increase the number of points attributed for the same level of contribution. The aim was to limit the drop in the future level of pensions, without a rise in contributions, while waiting for an upturn in employment that would permit an extension of the age for leaving work. With the agreement of 2003, following the Fillon reform, which tended to raise the age of retire-

ment, the social partners returned to their traditional policy of adjusting the purchase price of a point ("reference salary") in relation to changes in the salaries of contributors.

The use of the value of a point

Increasing the value of a point allowed pensioners protection from inflation and then to benefit from an overall growth in wages. But a drop in employment in the 70's obliged the social partners to revise this approach in the case of the executive scheme. The agreements reached in the 90's changed direction once again. The Agirc agreement of 1994 froze the value of a point and that of Agirc and Arrco of 1996 pegged the value of a point to the average salary rate of contributors minus one point and decided that "this adjustment could not in any case exceed annual price levels". Maintaining purchasing power, a minimum objective, although this was not always achieved at Agirc, became for a period of five years, a maximum objective, for Arrco as well as Agirc. With the agreements of 2001 and 2003, the value of a point was pegged on "the average level of prices excluding tobacco" up until 2008.

This rather rapid overview of 50 years of the two schemes' operations demonstrates the interest and flexibility of relying on points. For the beneficiary of the scheme, nothing has changed since the outset in the sense that the objective remains of accumulating points whose number will determine the level of a supplementary pension. Underlying this basic rule is the fact that the social partners have been able to adapt the two schemes to sizeable economic and demographic changes. Far from dictating their actions and reducing their authority and pragmatism, the points technique is a help in the search for a consensus among the various parties involved, i.e. companies, active workers and pensioners. It also serves in the search for an equilibrium that takes into account the constraints of the present while dealing with the demands of the future. At variance with the

* This is the origin of the expression "reference salary" to say the purchase price of a point.

Italian and Swedish approach of using notional accounts* that depend on “automatic piloting” of a pension scheme, the “French style” point

appears to be an instrument for aiding officials in piloting a scheme, an instrument whose utility depends on the way it is used.

Supplementary points schemes and providing information to active wage earners

Pierre CHAPERON
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The Law of August 21, 2003 on pension reform is intended to guarantee French citizens the right to information concerning their pension entitlements. Each scheme must be prepared to furnish an evaluation of acquired entitlements. Points schemes are particularly suited to such a task in contrast to those based on annuities.

The requirement for information contained in article 10 of the Law of August 21, 2003 is innovative in the sense that the information provided should give a complete picture of the entitlements being earned in the various schemes of a career.

Such information should allow contributors to better situate their entitlements with respect to the provisions of the Fillon Law such as:

- changes in the span of contributions with respect to the calendar established by the Law,
- the scope of choices provided by legislators (reductions, premiums, redemptions, retirement savings).

The information, which is to be supplied every five years as of age 35, poses a problem for the schemes in translating the progressive acquisition of rights, given the multiplicity of methods for acquiring them.

It appears obvious that a scheme that expresses rights in points is best suited for regularly communicating the rights acquired year by year by contributors. The acquisition of rights can thus be itemized all along a career, showing the gradual accumulation of a pension.

The information provided has meaning even for those with a limited period of contribution due to their recent entry in the scheme, such as newly recruited young workers or those with a recent change of status. It is merely a sign of the contributory nature of the rights acquired which remain proportional to the period of contribution and the sums paid in.

A description of the entitlements being acquired proves more difficult in schemes organized along other lines:

- in defined benefits schemes of a military or civilian type, the calculation of entitlements has no real meaning except at the end of a career since they are determined in function of the last six months of earnings,

It is nevertheless possible to provide an accounting of the gradual acquisition of entitlements by applying the current annuity rate and the number of years worked at the latest salary.

This solution, which provides a result as far from reality as the person concerned is from retirement, will not fail to pose problems for those who do not have the fifteen years required for qualifying for a military or civilian pension.

* See on page 29 Elise Prats' article: “Development of notional accounts in Europe”.

– the General Scheme uses a formula that supposes knowledge of the last wages. This complex calculation lends itself badly to providing

information during the course of a career. Here too, the determination of entitlements supposes knowledge of the last salary.

The advantages of the points technique in managing short or interrupted careers, The case of IRCANTEC

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With a member population that is extremely diverse and contributing for highly variable periods, with a turnover in contributors of almost 25% each year, the IRCANTEC, which supplements the Basic General Scheme for State and municipal contract employees, without a doubt represents the best illustration of the interest of the points system in adapting pension schemes to occupational mobility.

Established by law as of January 1, 1971, the IRCANTEC (Supplementary Pension Scheme for State and Local Contract Employees) is the result of a merger of two supplementary pension schemes for contractual employees of the public sector:

– IPACTE, set up in 1949 for executive employees,

– IGRANTE set up in 1959 for non executive employees and for executives on their wages up to the social security ceiling.

The scheme comes under the authority of an administrative council composed equally of representatives of members and public authorities. The council is consulted on all questions concerning the scheme's management and expresses opinions that result in rules and regulations. The scheme is administered by the Pension Department of the *Caisse des Dépôts et Consignations*.

Membership is compulsory for all executive and non-executive employees of the State, territorial communities (communes, departments, regions) and their public establishments (admini-

nistrative, industrial and commercial, scientific and technical, health) when they are not regular employees or affiliated to a special scheme.

IRCANTEC is also the pension scheme of local elected representatives. Mayors and their assistants have contributed since 1973 and benefits have been extended to include municipal, general and regional counsellors since 1992 at the moment they receive their official allowances.

In 2003, IRCANTEC collected roughly €1.7 billion in contributions from 80,000 employer organisations. The number of affiliates with an IRCANTEC account amounts to nearly 1.3 million people, of whom some 2.5 million continue to contribute. The number of paid benefits represented €1.3 billion in 2003 for 1.5 million pensioners.

Features of the populations managed by the scheme

Contributors to IRCANTEC are for the most part young and feminine. Their average age is

34.5 and women represent 60% of the total. The average length of contribution is low, around 9 years and turnover is high, nearly a quarter of the overall membership. This can be explained by the huge diversity of employer organisations and the employment conditions of contract public workers.

The scheme includes a wide range of employee organisations

Due to their very nature, the employer organisations are extremely diverse, in size and overall contributions as well as the sort of employment they provide.

They include a multitude of organisations employing few non permanent staff, for the most part communes and some very large groups such as hospitals or the ANPE (French unemployment office). The overall number of workers per organisation is low, of the order of 30 contributors and their concentration is high, given the fact that roughly 2% of the employer organisations account for nearly half the contributors.

The concentration of workers and the special nature of the jobs provided by the biggest employers explain why half of the overall total of contributions is paid by less than 1% of the employer organisations.

The multiplicity of registered organisations and the conditions of affiliation produce a highly atypical membership

● **Jobs falling within the scope of IRCANTEC are largely unstable.**

Job conditions are widely variable among the contributors to IRCANTEC. Permanent posts permitting contract employee eventual access to regular jobs exist side by side with ones that are non-permanent, if not part-time or seasonal. Some 60% of contributors are affiliated for part of the year, whether for full or part time posts.

Part time work concerns 32% of the work force and is put up with in 80% of the cases. A number of part time affiliates are composed of part time government workers for territorial communities and their establishments who do not

come under the CNARCL (National Retirement Scheme for Agents of Local Authorities). It also includes seasonal workers (camp caretakers, playground coordinators, etc.).

A sizeable percentage of workers contribute for a secondary job. They are persons who, possessing a special competence in the area of their main activity, ensure training or teaching elsewhere relative to this competence. They can also be young people still in school or students working during holidays. Such jobs are not intended for permanent staff.

The variety of job conditions explains the high yearly turnover of those contributing to IRCANTEC. Roughly 600,000 of those who contributed in 1999 ceased in 2000, representing some 30% of the overall total. Meanwhile, over 650,000 new contributors appeared, including many former affiliates returning to jobs covered by the scheme.

The average length of careers covered by the scheme is 7 years and 8 months for affiliates approaching retirement. This is trending toward a decrease. There is still a strong concentration of short terms: half of new pensioners worked for periods of less than 4 years and 4 months.

● **The average remuneration is low**

In 2002, the average pay was €10,081 or 3/4 of the minimum wage. This is due largely to part time work and a reduced presence during the year (seasonal employment, secondary activities, etc.).

On the other hand, some stable populations like hospital doctors or the staff of public and commercial establishments earn relatively high pay for rather steady jobs.

In nearly 13% of retirements, a short career linked to rather low pay does not allow accumulation of the number of points required for payment of a pension. When the number of points is too low (the level is currently 100 points), the pension is replaced by a lump sum payment.

● **Jobs with several employers**

With the exception of steady full time jobs, estimated at roughly 16% of the overall total,

careers covered by IRCANTEC are often made up of successive or interrupted periods with several organisations.

An affiliate not only works for a number of employers over the term of an entire career but also during given periods. This is the case for doctors practicing in several hospitals as well as for politicians with several elective posts. Part time work seems to favour this practice.

The points technique is well suited for the short or interrupted careers covered by IRCANTEC

IRCANTEC is a pay-as-you-go scheme, with defined contributions, whose benefits are expressed in points. It functions on the basis of reporting of remunerations received upon its behalf.

For employer organisations, filing implies no special effort in as much as information concerning remuneration is enough for determining the number of points. Just as with the Social Security system, all that is required is to specify the amount under the ceiling (A bracket) and that exceeding the ceiling (B bracket) when making withholdings.

This relative simplicity does not preclude the gathering of additional information from employers concerning the rights of certain affiliates in special situations or in the case of special regulatory requirements. For example, the contribution base of hospital practitioners can represent all or part of their remuneration depending on their status. Consequently, hospitals must provide such information. Another example is that of part time officials who benefit from an allowance in A bracket below the Social Security ceiling if they have a single employer or if remuneration for a full time post is above the Social Security ceiling. An employer must stipulate the rate of activity so that the allowance can be calculated. Lastly, when an official works for several employers, the employers must agree to apportion the A bracket in relation to the salaries paid by each.

When all of the information provided by employers is validated, it is credited to an account

denominated in points. As we have seen, such a system facilitates management of careers that are often short, interrupted and unstable. It particularly allows:

● **Rights to be automatically consolidated by simply accumulating acquired points, no matter the number of employers and periods**

In a points system, a salary is the main element of calculation. Whatever the status of the affiliate and the type of work – part-time, seasonal, secondary – salaries give rise to contributions deducted at the source which are then converted into points.

In cases of mobility within the scheme, a change of employer makes no difference to the overall situation. The new rights are simply added to those already acquired.

In cases of change of job where an employer does not fall within the scope of IRCANTEC, the account is simply held in escrow until liquidation or an eventual new contribution.

● **A relatively equitable method of calculation**

In a scheme with annuities, the amount of pension depends either on the salary at the end of a career (civil pensions, CNRACL, special schemes) or the best years of a career (Social Security General Scheme).

In the first case, a pension reflects the end of a career. However, those of IRCANTEC are usually unstable and are not necessarily linear and ascendant. A career terminating in part-time employment would have an unfavourable effect on the size of pension. In the second case, years of part-time work taken into account when determining the average annual salary would have the effect of lowering the pension. In such conditions, calculation with points does not seem on the whole as unfavourable.

Moreover, the average annual salary for the Basic General Scheme is determined on the basis of the best 25 years of a career as of 2008. At present, nearly 94% of the newly retired of IRCANTEC have a shorter career. The

contributory character of a points scheme thus lends a measure of equity to the determination of the size of the pension.

● **A flexibility in the retirement of certain populations**

Some elected officials have held several categories of elected posts in the past of various natures (municipal, departmental, regional, intercommunity cooperation). When they reach the age of retirement, they may find themselves occupying only one of these posts. In this case, they benefit from an allocation based on the points acquired for those that have ceased. This is made possible thanks to a method of acquiring rights that allows a partial liquidation to be carried out. The possibility is also open to affiliates who combine a job with a pension fulfilling certain conditions (progressive retirement). This method of operation has proved itself to be perfectly adapted to the management of overlapping jobs and pensions.

● **Immediate assessment of rights in cases of transfer from or to another scheme**

Since IRCANTEC is a scheme with defined contributions, benefits are directly proportional to contributions, i.e. to the number of points accumulated in an affiliate's individual account. A transfer to or from another scheme is carried out by simply converting the points acquired in the other scheme to IRCANTEC points, or with the transfer of deferred annuities represented by the

points acquired by the affiliate with IRCANTEC to the other regime and their conversion into pension benefits.

These transfer and conversion procedures are used to coordinate IRCANTEC with mandatory supplementary schemes of the private sector in cases where a change in the legal status of a firm implies a change in affiliation to a retirement scheme.

● **Knowledge of a future pension and respect for rights to information**

At any moment of his career, an affiliate is in the position of knowing the amount of pension he is entitled to since all that needs to be done is to compute the number of points obtained in function of the latest known service value of a point. For an affiliate with an irregular career, an annuities system would not allow the same flexibility.

● **Simplified retirement**

At the moment of retirement, all that needs to be done is to add the number of acquired rights to the number of free points, if the affiliate satisfies certain requirements for obtaining these, and convert them to an annual amount of pension. When the affiliate's account has been suitably updated, settlement does not require any sort of career reconstitution that usually proves unusually delicate in the case of an irregular career and becomes a minimal formality.

PART TWO

THE SPREAD OF POINTS SCHEMES

From the drafting of a national collective agreement for executives to the Law of August 21, 2003, the development of France's supplementary schemes

Elise PRATS

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In France, the points system invented by the founders of the supplementary scheme for executives in 1947 has gained widespread acceptance. Practically the entire active population is covered by a mandatory supplementary points scheme today.

The French supplementary schemes came into being on October 4, 1945, with a ruling calling for the compulsory membership of all the salaried employees of the Social Security General Scheme. Benefits provided by private schemes to some 200,000 employees up to then, according to the collective agreements of 1937 and 1938, could not be eliminated and were converted into additional benefits, supplementing those provided by Social Security. On March 14, 1947, representatives of the national committee of the French employers association as well as those of the major labour and executive employee unions signed a collective agreement for the first supplementary retirement scheme for engineers and executives of industrial and commercial companies. This agreement has continued to serve as a model for other collective accords.

The executive retirement scheme: choosing the points system

In 1947, ruined by the War, France also faced an accelerating monetary deflation begun with the First World War. The problem of organizing retirement was now one of guaranteeing purchas-

ing power. A retirement pension could no longer be based upon notions of alimony or subsistence but had to refer to concepts guaranteeing a level of material comfort to a beneficiary in relation to a standard of living.

The Convention provided for distributing an annual sum of resources, deriving mainly from contributions, to pensioners in proportion to rights acquired thanks to an overall evaluation of previous conditions of work. The rights accorded an executive following completion of a career are thus the sum of annual evaluations, the total being a numerical expression of the share to be distributed of the amount of resources available for distribution in the form of pension payments. The overall compilation of shares cannot reasonably be foreseen unless real identically equivalent situations (similar in contributory level and duration) lead to an equal distribution of rights.

So, a mechanism was needed to translate successive evaluations into numeric expressions that were independent of monetary fluctuations and variations in wage levels. For this purpose, two units have been introduced, the one serving to measure rights, the reference salary, the other



for expressing and recording the results of measurements, the point. This system allows the reference salary to be varied in a way that

constitutes equal rights for different payments but is reckoned equivalent with respect for changes of salary over time.

The origin of "point"

The point, as a unit of account, was an idea introduced in the Croisat and Parodi decrees of 1945, concerning organisation of wages after the War. With the aim of introducing greater wage stability among companies, these decrees set up a job and wages classification per branch in function of qualifications. Each job was assigned a coefficient, a number of points, to which a monetary value was attributed.

This point classification also served as a base for defining three types of Agirc affiliates: statutory executives (or executives "article 4" of the collective agreement of March 14, 1947), assimilated executives (executives "article 4 bis"), i.e. employees, technicians and supervisors "classified with reference to the decrees on wage organisation with ratings equal to or over 300", and lastly, "article 36" employees, i.e. employees, technicians and supervisors "with a rating of at least 200 in the decrees on wage organisation" and whose employer has voluntarily asked for affiliation to an Agirc scheme.

The use of the points system in other supplementary schemes

The method used for the executive scheme was eventually introduced in numerous other schemes and, today, virtually all the French supplementary retirement schemes have opted for the points system.

Unirs (the National Union of Retirement Institutions for Salaried Employees) was set up on May 15, 1957, with the objective of coordinating conditions for affiliation and compensation of financial costs among schemes. The Unirs represented the first step toward according the right to a supplementary pension to all workers. The Unirs founders were perfectly familiar with the system established for executives ten years previously since several among them were signatories of the National Collective Agreement of March 14, 1947. Lending them a hand were teams that had contributed to its drafting and implementation. Affiliation to Unirs, which was optional at the outset eventually, became mandatory. Unirs adopted a points system and through its member institutions distributed a booklet allowing each contributor to personally record yearly statements of accumulated points. The spread of retirement to all private sector workers

became a reality with the agreement of December 8, 1961, giving birth to Arrco.

In 1951, the State set up Ipacte for its contract executives and extended this to the contract executives of local communities. The creations of Unirs in 1957 for non-executive employees of the private sector led to the creation of Igrante two years later in 1959 for non-contract State executives. In 1970, Ipacte and Igrante were merged to form mandatory supplementary scheme Ircantec (Institution for supplementary retirement for non tenured employees of the State and local communities).

Furthermore, as of 1949, notaries, doctors and pharmacists formed a supplementary scheme for old age insurance for the liberal professions. Almost all the rest of the liberal professions followed them, with the latest supplementary scheme created for the medical professions in 1984. Today, only midwives remain without a mandatory supplementary scheme. Craftsmen and shopkeepers created their supplementary schemes in 1978 with that for craftsmen being mandatory and the one for shopkeepers optional. Shopkeepers had to wait until January 1, 2004 to benefit from a mandatory supplementary scheme. As of January 1, 2003, managers of farm concerns benefit from a supplementary points scheme.

The expansion of points schemes

Many supplementary schemes for non-executive employees of the private sector were set up in the 50's, mainly based on points. Only the creation of Unirs (1957) and the federation of these schemes in Arrco (1961) are mentioned here. Some branches, such as banks or the General Social Security Scheme, have created their own supplementary schemes. But these generally operated in annuities according to the so-called "top-hat schemes".

There are also numerous optional schemes such as Prefon or Fonpel. They have not been included here, as well as the new formulas "Perp" and "Pere" set up with the Law of August 21, 2003. Yet some of these retirement schemes use points.

Schemes in italics correspond to the various sections of the liberal professions.

Regulatory measures usually follow the wishes of the professions concerned. Thus the approval of a mandatory supplementary scheme for shopkeepers by the Law of August 21, 2003 was a follow-up to a decision reached at the plenary meeting of Organic on October 22, 2001.

1947 establishment of the executive scheme (Agirc), with the national collective agreement of March 14, 1947.

1949 *establishment of the supplementary schemes for notaries, doctors and pharmacists by decree of April 22, 1949*

1950 *establishment of the supplementary scheme for veterinarians and dental surgeons by decree of January and October 21, 1950.*

1951 establishment of IPACTE for State contract and temporary officials of executive status by decree of December 12, 1951.

1953 *establishment of the supplementary scheme for chartered accountants by decree of May 21, 1953;*

1955 extension of IPACTE to include departments and communes and their public establishments by decree of June 9, 1955.

1957 establishment of UNIRS for non-executive employees of the private sector with the national agreement of May 15, 1957.

1959 establishment of IGRANTE for temporary non-executive State officials by decree of December 31, 1959.

1961 – possibility of extension of IGRANTE to non-executive contract officials of departments, communes and their public establishments by decree of April 18, 1961.

– *establishment of the supplementary scheme for authors and musical composers by decree of December 4, 1961,*

– establishment of Arrco to federate the numerous supplementary pension schemes established in the 1950's for non-executive employees of the private sector with the national agreement of December 8, 1961.

1962 *establishment of the supplementary scheme for artists and musicians by decree of April 11, 1962.*

1964 *establishment of the supplementary scheme for authors and playwrights by decree of March 11, 1967.*

1967 *establishment of the supplementary scheme for insurance agents by decree of December 22, 1967.*

1971 merger of IPACTE and IGRANTE to form IRCANTEC by decree of December 23, 1970.

1978 establishment of the optional supplementary scheme for industrialists and shopkeepers and the mandatory supplementary scheme for craftsmen by decree of March 14, 1978.

1979 – *establishment of the supplementary scheme for architects, engineers, technicians, experts and consultants by decree of March 21, 1979.*

– *establishment of the supplementary scheme for Ministerial and public officials by decree of March 27, 1979.*

1984 *establishment of the supplementary scheme for nurses, physiotherapists, chiropodists and speech therapists by decree of February 22, 1984.*

2003 establishment of the supplementary scheme (R.C.O.) for farmers with the Law of March 4, 2002.



2004 establishment of the supplementary scheme for industrialists and shop keepers with the Law of August 21, 2003.

2005 establishment of the additional scheme for civil servants with the Law of August 21, 2003.

The last supplementary scheme to be set up was the additional scheme for civil servants, which became operative on January 1, 2005 and represents the second stage of the pension system for government employees. It is designed to improve pensions for employees of the State, local authorities and hospitals. The scheme relies on the points system and is based on a fraction of all of the elements of remuneration not

taken into account in the calculation of the basic pension, such as bonuses and allowances. This choice can probably be explained, as for Ircantec by the disparate nature of bonuses. Indeed, according to an official survey, bonuses represented an average 17% of the base pay of full-time tenured agents of government departments. But this ranged from 9% for university professors to 55% for engineers in high level State posts.

Setting up a single ARRCO scheme with a points system

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Given the task in 1961 of coordinating the supplementary schemes for non-executive employees and organising financial compensation among them, Arrco has relied on the points system to carry it out. It is the “reference return” that has provided the basis for a financial solidarity that has been pursued up until the establishment of a single Arrco points scheme.

Before January 1, 1999, when Arrco became a single scheme, the Arrco Federation grouped 41 different schemes. These schemes were free, to a certain extent, to determine their own operational parameters. A system of financial compensation among the various schemes was begun. From 1962 to 1977, this was solely for mandatory transactions (those at the minimum contribution rate). From 1978 on, supplementary transactions (those over the minimum contribution rate) were taken into account.

Solidarity among points schemes, overall rules

In a points scheme, the instant return is theoretical, since contributions and the resulting

benefits for a given affiliate are separate in time. The notion is fundamental though for comparing schemes, since it allows the level of pension benefit paid in exchange for the same contributory effort to be measured. In terms of annual comparisons, a higher level of return produces a higher level of benefit.

Is it possible to initiate financial solidarity among different schemes on a common and equitable basis synthesised in a given return (reference return) for a theoretical scheme. The benefits paid by each federated scheme are reduced to this common basis through the ratio of the scheme return to the reference return. Once this operation is carried out, a given amount of

benefit is considered to correspond to a contributory effort that is identical in each of the schemes concerned. Schemes running surpluses can provide compensation to those with deficits on an equitable basis.

The case of Arrco

Prior to January 1, 1999, the mechanism for financial compensation among Arrco institutions functioned according to the principle outlined above (financial compensation among regimes in terms of a reference return). The reference return of Arrco could be likened to a net corrected return for a theoretical scheme, taking into account the size of the appended benefits (mainly survivors pensions) compared to direct rights and the expenses for administration and social action. Compensation was carried out in two steps:

Referring the benefit costs of each scheme to a common reference synthesised by the reference return

For a scheme with a return higher than the reference return (net return corrected from appended benefits and rate of deduction from contributions), the costs up for compensation were reduced by applying the scheme's ratio of return to the reference return. The operation was reversed for a scheme with a return lower than the reference return.

Benefits not up for compensation were financed by the schemes themselves through use of their own reserves, with each institution free to set its own operating parameters (point value, value of reference salary and deduction rate for contributions). However, institutions without internal reserves could not pursue a return higher than the reference return of the entire Arrco group.

The net corrected return of an institution was all the higher when the value of a point was high or when the deduction rate for contributions was

high. Thus, each institution enjoyed the possibility of adjusting the trend of its parameters to arrive at a given net corrected return.

Redistributing the corrected costs among schemes in proportion to contributions

After redistribution, each scheme should note the same cost ratio (quotient of benefits for contributions) as the cost ratio of the entire Arrco group. Compensation was thus an operation for a nil balance (amount of compensation paid = amount of products received in compensation), where each institution with a cost ratio before compensation lower than the overall cost ratio paid compensation, while institutions with a cost ratio higher than the overall cost ratio received compensation.

After compensation, each institutions was placed in an identical financial situation (in terms of cost ratios) and on a par with the entire Arrco group. The results for the entire Arrco group were allocated to a so called "common" reserve for which each institution managed a share but did not so to speak own it. The common reserve rose or decreased according to whether the scheme was in surplus or deficit on an overall scale.

According to the financial compensation mechanism set up by Arrco, the higher the corrected net return of the institution (i.e. the higher the point value, or the higher the deduction rate on contributions due possibly to an ambitious social action policy) and the more the proportion of allocations taken in compensation are lower (the higher the amount of allocations non-compensated and payable by the institution, the higher the recourse to its private reserves).

At the moment of integration into a single Arrco scheme on January 1, 1999, the institutions ceased setting the changes in their working parameters themselves and whatever reserves they possessed were mutualised.

Points in Germany's Basic Pension Scheme

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Based on annuities before 1992, Germany's basic pension scheme is now expressed in points. The price for acquiring a point is pegged to the trend in the average gross salary; one year of pay at the average salary is worth a point. But the Germans add a standard replacement rate, whose calculation is based on the "standard pension".

The Basic German Scheme covers the large majority of the country's active working population: workers of the private sector, most of those of the public sector and the majority of independents. Retirement pensions paid out by the scheme represent three-quarters of the overall value of retirement pensions. It also pays disability and survivors pensions. Here, the main subject under consideration is retirement pensions. Throughout their careers, affiliates of the Basic German Scheme accumulate points that serve as a basis for calculating the amount of their pensions. It's easy to jump to the conclusion that the scheme records points like a French supplementary scheme. We will see that the way the amount of pension is determined is actually quite different from France's supplementary schemes.

The elements used for determining a pension

There is a ceiling on wages taken into account in calculations and, in 2002, it was €54,000 annually. Usually the ceiling is pegged to changes in the average wage. The average wage used for adjusting the ceiling is the average gross wage of the total number of contributors. In 2002, this stood at €28,949, which represented around 1.8 times the average wage. In 2003, the ceiling was raised to €61,200. But this was exceptional. Today it represents around 2.1 times the average wage.

Contributors receive points for each year of contribution. The number of points attributed

for a given year is equal to the amount of wages below the ceiling (qualifying wage) divided by the average wage. Thus, an entire point is attributed to contributors having earned the average wage during a year, a half point is attributed to those having earned half of the average wage and a point and a half is attributed to those having earned one and a half times the average wage.

The number of points attributed for a year T is equal to:

$$\frac{W_T}{W_{Taverage}}$$

with W_T representing the qualifying wage for the year T and $W_{Taverage}$ the average salary of the same year T .

The total number of points acquired during an entire career is the sum of points attributed for all of the contributing years. We denote this number as E .

$$E = \sum_{T=1}^N \frac{W_T}{W_{Taverage}}$$

N represents the total number of years for which someone has contributed to the scheme (or has acquired points for assimilated periods). A contributor having earned the average wage for 45 years, for example, will have a total of 45 points.

The average salary used for calculating pensions is the average of all the gross wages of the economy. It includes the part of wages that

exceeds the ceiling. The wages of affiliates are taken into account as well as those of Federal civil servants, who do not contribute to the basic scheme but to a special scheme.

Calculating a pension

The formula for calculating a pension is the following: $P_{Amonthly} = ELCV_A$

$P_{Amonthly}$ corresponds to the monthly pension paid during the year A . It represents the gross pension, before deductions for social contributions paid by pensioners.

E corresponds to the total number of points obtained by an affiliate during a career.

L is a factor that adjusts the amount of pension according to the age of retirement. Its value is equal to 1 for a departure at the age of the full rate. It is lower than 1 for an early retirement and exceeds 1 for a deferred retirement. Such reductions and bonuses according to the age of retirement were voted by the legislature in 1989 and are entering into force progressively.

C adjusts the amount of pension according to the type of pension. This factor equals 1 for a retirement pension. In other cases, it may be lower than 1. For example, it is equal to 1 for total incapacity for work and 0.5 for partial incapacity.

V_A represents the euro value of a monthly pension attributed for a point, that is for a year of full time work at the average wage. This value is adjusted regularly, usually every year (in July).

For retirement at the age of the full rate, the terms L and C are both equal to 1. In this case, the formula for calculating a pension is simply E ; V_A , that is the total number of points multiplied by the value of a point.

$$P_{Amonthly} = EV_A = \sum_{T=1}^N \frac{W_T}{W_{Taverage}} V_A$$

In 2002, as of July 1, the value of a point was €25,587.

Thus a pension paid in 2002 to an affiliate having worked for 35 years, for example, and having received an average wage was $35 * €26,587$, or €898.55 monthly.

The point value V_A determines the level of newly settled pensions as well as those already being paid.

The formula for calculation renders a pension exactly proportional to the total of qualifying wages received throughout a career.

Some periods of inactivity give rise to the attribution of points with no payment of contribution by the insured. Those concerned are: periods devoted to the education of children, periods of unemployment or sick leave and periods devoted to the care of a family member within the scope of dependency insurance. The number of points varies with respect to the reason for inactivity.

The shift from annuities to points in 1992

The formula for calculating a retirement pension from 1957 to 1992 used a fixed annuity rate. The pension was expressed in terms of an annual amount, instead of a monthly amount as is the case presently. The formula was the following:

$$P_{Aannual} = \frac{\sum_{T=1}^N \frac{W_T}{W_{Taverage}}}{N} NW_{Aaverage} 1.5\%$$

The annuity rate was 1.5% for a retirement pension. The rate varied according to the type of pension: for example, for a disability pension, it was 1% instead of 1.5%. There was no reduction or bonus depending on the age of retirement.

For 45 years of career remuneration at the average wage, a retirement pension was equal to 67.5% of the average wage, which is 45 multiplied by 1.5%.

In 1992, the formula for calculating a pension was modified to its current form, without modification of the amount of pension.

Formula since 1992:

$$P_{Amonthly} = EV_A = \sum_{T=1}^N \frac{W_T}{W_{Taverage}} V_A$$

Formula before 1992:

$$P_{Aannual} = \frac{\sum_{T=1}^N \frac{W_T}{W_{Taverage}}}{N} NW_{Aaverage} 1.5\%$$

If we use E from the new formula, the old formula becomes:

$$P_{Aannual} = \frac{E}{N} NW_{Aaverage} 1.5\% = EW_{Aaverage} 1.5\%$$

The pension with the new formula is the same, at the moment of its initial application, as the pension calculated with the old formula. V_A in the new formula being equal to the average annual wage of the period divided by 12 (when calculating the monthly pension instead of an annual pension), multiplied by 1.5%.

The old formula expresses the pension as a percentage of the average wage (one annuity) multiplied by the number of years of career and adjusted in function of the relation between the contributor's wage and the average wage. The current formula, in use since 1992, takes into account the relation between the contributor's wages and the average wage exactly in the same way but instead of calculating the amount of pension as a percentage of the average wage, it allots a monetary value to a point. Thus the value of a point represents the share of monthly pension granted for a year of contribution with a remuneration equal to the average wage.

Adjusting a point

The value of a point is the key variable in pension adjustment. Since the elimination of the annuity rate from the calculation formula, the preservation of the value of a pension in relation to wage trends depends on how the point is adjusted.

Before 1992, pensions followed trends in the

average gross wage. After 1992, point adjustments were based on trends in the average net wage.

The net salary was calculated by deducting income taxes and pension contributions from the wage. Given the fact that such contributions tended to rise more rapidly than gross wages, this change slowed increases in pension. Pensions decreased in relation to gross wages, but the relation between pensions and net salary was stable.

In 2001, methods of indexing the value of a point were modified in a way to slow increases in pension. Adjustments in the value of a point were based on those of the gross wage, instead of the net wage. However, adjustments will be reduced in the future in function of three factors:

- increases in employer and worker contributions to the basic scheme;
- successive increases programmed by contributory legislation concerning contributions that an affiliate pays into new optional funded retirement savings accounts ("Riester" accounts);
- rises in the demographic ratio of the scheme, that is the ratio between the number of beneficiaries and contributors

The "standard" pension norm

In public discussions concerning the basic scheme, the "standard" pension is used regularly as a norm for following changes in pensions. This is a full retirement pension paid for a career of 45 years, at the average wage. In this case, the amount of pension is 45 multiplied by the value of a point.

The indicator often spoken of in discussions is the standard pension related to the average wage. This indicator is called the *Standardrentenniveau* in German and we use the expression "replacement rate for the standard pension". In fact, it is the replacement rate for a certain type of career.

The example under discussion is fictive though and does not correspond to real careers. Few contributors contribute for 45 years and, in this case, it is unlikely that the person in question will be continuously remunerated at the average wage. Pensions effectively paid are much lower than the “standard” pension: in 2000, the average pension (retirement, disability and survivor all together) represented 40% of the “standard” pension for women and 85% of the “standard” pension for men.

The replacement rate for the standard pension therefore, does not allow the effective replacement rate to be measured but rather its trend.

In public discussions, there are actually two replacement rates for the standard pension:

- a gross rate, equal to the gross standard pension divided by the average gross wage;
- a net rate, equal to the standard pension, net of social contributions paid by pensioners, divided by the average net wage.

Since the 90's, the norm for judging pension income with respect to the income of the actively employed is a comparison of the net income of the two groups. So, it is the net replacement rate for the standard pension that is most often under discussion.

Calculating the replacement rate for the standard pension in 2002

Point value on July 1, 2002	€25,587
Standard gross monthly pension	€1,151.42
Monthly pensioner contributions – medical and dependency insurance	€89.25
Standard net monthly pension	€1,062.17
Standard net annual pension	€12,746.04
Average gross wage 2002	€28,949.00
Taxes and social contributions 2002	€10,566.00
Average net wage 2002	€18,383.00
Gross replacement rate for standard pension	47,73 %
Net replacement rate for standard pension	69,34 %

Lets take the example of calculating the replacement rate for the standard gross and net pension in 2002.

The net replacement rate is much higher than the gross replacement rate. The difference is due to the difference between the deduction rate on pensions and wages. Active wage earners pay a larger share of their wages in taxes and contributions than pensioners pay on their pensions.

The net replacement rate of the standard pension is often referred to as the norm to be respected by a pension scheme. In fact, the standard pension represents an annuity rate. One may calculate the annuity rate in dividing the replacement rate for the standard pension by 45, the number of years in question. For 2002, for example, the annuity rate for the net pension was 1.5%.

Precisely:

$$1,5408\% = \frac{69,34\%}{45}$$

In 2002, the annuity rate for the gross pension was 1.1% (exactly 1.0606%). This figure is much lower than the annuity rate for the gross pension of 1.5% used to calculate benefits before 1992.

With the reform of 1992, there was question of adopting a net replacement rate for the standard pension of 70% as a target (in other words, an annuity rate of 1.555%). In practice, the net replacement rate for the standard pension rose from 66.9% to 70.4% between 1993 and 2000. (In other words, the annuity rate rose from 1.487% to 1.564%.)

With the reform adopted in 2001, a decrease in the net replacement rate for the standard pension was foreseen by parliamentarians. They de-

clared that the rate should not drop below a level of 65%, or an annuity rate of 1.489%.

At the same time however, the definition of “net” was modified in a way reducing the net wage in relation to the gross wage. The net wage was calculated in deducting not only mandatory deductions but also optional contributions that members could pay to individual savings-retirement accounts.

The change reduced the net wage used in calculating the net replacement rate for the standard pension and, as a result, increased the rate. In other words, the norm for the standard pension was changed, a move which prevents comparisons of the new norm to the former one.

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Development of notional accounts in Europe Similarities and differences with points schemes

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At first glance, the formula of notional accounts, innovative in the retirement area, closely resembles the formula for points. Each insured member acquires a virtual capital of pension rights that reflect contributions and can be compared to points accumulated in a French member account. But the value of this capital varies in function of the life expectancy of the insured member's generation and his age at the moment of retirement. The integration of such demographic variables as well as trends in GDP tends to make notional accounts a mechanism for "automatic piloting", which is rather different from the points system in use in French schemes. If there is a resemblance between the two, it is not an identical.

A new model of scheme known as a "notional scheme" appeared in the mid-90s. With the influence and aid of international organisations, interested in promoting more individualised pensions linked to contributions, several European countries replaced their public defined benefit schemes with defined contribution arrangements, notably Latvia, Italy, Poland and Sweden. After an explanation of the main characteristics of notional schemes with defined contributions we will examine their resemblance to points schemes.

Operating a notional scheme with defined contributions

Acquiring and calculating rights

In a scheme with notional accounts, the level of pension is related to contributory efforts made throughout a working career. To register them, the individual account of each member is credited yearly with contributions paid by an employer and the member without the funds being actually deposited. Such accounts are said to be "fictive" since they are not funded.

These schemes continue to function in pay-as-you-go, with the contributions effectively paid going to finance the pensions of pensioners for the year underway.

Schemes with notional accounts can also award non-contributory rights, such as those for periods of education of children, military service or disability. Calculation of such rights is based upon a reconstructed income reflecting the standard of living of the member. Financing comes from public sources.

When rights are calculated, the capital accumulated is converted into an actuarial annuity, meaning that the capital value of the whole of pensions received during a retirement must correspond precisely to the sum of the contributions and adjustments made during an active career. The coefficient of conversion of potential capital into income is known as the *divisor* and corresponds to the purchase price of one unit of pension. Three measures are taken into account: the age of a member at retirement, the unisex life expectancy of his generation at this age and the adjustment ratio of the pensions.

Coefficient of conversion and financial equilibrium of a scheme

With the conversion coefficient, schemes with notional accounts have been provided with a mechanism of automatic adjusting pensions to increasing longevity. Within the same generation, the conversion coefficient decreases when



the age of retirement goes up. Thus delaying a retirement means receiving a higher pension since the length of retirement will be shorter on the average. For a given age, the conversion coefficient goes up for successive generations since the life expectation for that age goes up. A member born in 1945, retiring at 62 will receive a higher pension than one born in 1946 retiring at the same age. To maintain a constant ratio of calculation, succeeding generations will have to work longer.

Notions of a legal retirement age and periods of insurance thus have no basis in a notional scheme with defined contributions. With the size of a pension determined by the effective age of retirement and the effort of contributions throughout a working career, only the minimum retirement age is set. Beyond this age, retirement is flexible. The longer a career, the higher the amount of virtual acquired capital and the lower the conversion coefficient for capital. The scale of acquisition and liquidation of rights is thus determined in such a way as to encourage a longer working career and the age of retirement is a matter of individual choice.

Notional account schemes also introduce a mechanism for long-term economic adjustment. In setting a constant exogenous ratio of contribution, they ensure economic stability through variable ratios of benefits to contributions. For this, the adjustment of accumulated capital by individuals must be equal at most to growth in the average contribution base, equivalent to growth in GDP* over the long term and that the pension be adjusted along the same lines. During the phase for accumulation of rights, contributions are adjusted annually according to an established index. This corresponds to the average per capita salary in Sweden and the average 5 year ratio of GDP growth in Italy.

In order to ensure a balanced performance for the scheme during the retirement phase, the adjustment ratio adopted for converting capital

into benefits should be equal to the ratio of growth of the contribution base. Since this information being unavailable, it is possible to adjust the discount ratio: either through maintaining a low replacement ratio and ensuring a real rise in pension afterwards, or with a zero discount ratio, or by ensuring a high replacement ratio and maintaining purchasing power, or with a positive discount ratio approaching the long term growth rate of the contribution base. This last case allows a scheme to distribute a share of future economic growth to pensioners in advance. Italy has retained an effective pension adjustment ratio of 1.5% and Sweden one of 1.6%.

To maintain equilibrium over the long term, taking into account the fixing of the discount ratio, notional account schemes must dispose of a flexible mechanism of pension revaluation. In freezing the adjustment ratio at a level of r , the pension revaluation ratio should be equivalent to the difference between the reported growth rate of the scheme's contribution base and the return on r already provided. If growth of the contribution base is lower than the adopted discount ratio, the scheme's performance will exceed the ratio that renders it financially sound. When the growth rate of average per capita wages is above 1.6% in Sweden, pensions are adjusted upwards to reflect the difference, in the opposite case, pensions lose their purchasing power.

Common ground and differences between notional schemes and points schemes

Notional schemes are often compared to points schemes insofar as retirement benefits provided by the two reflect the contributory efforts of each member during an entire working career. In the two types of defined contribution schemes, each member has an individual account in which contributions made by the employer and the affiliate are recorded. Such accounts allow the career of each member to be individually retraced. Although the level of

* This supposes a stable share of wages in GDP.

pension is closely linked to contributions, objectives of redistribution through non contributory operations are not completely disregarded since certain occupational hazards may be taken into account. However, notional account schemes differ from points schemes in two related aspects: building-up returns and piloting the scheme.

The concept of yield

In a points scheme, the purchase and servicing value of the pension point that determines the yield of the scheme are set annually. When a member pays a euro of contribution in the year t , he acquires at the conditions for that year Rt euros of annuity benefit which will be paid at the moment of retirement. During the year t , the yield is the same for all members whatever their age. It does not depend on the individual characteristics of the member and thus allows the mutualisation of different personal situations. This yield is instantaneous, it varies with time. The same euro of contribution does not generate annuity benefits of the same amount of Rt euros the following years since the point is revalued every year.

In a notional account scheme, the parameters for pension calculation are set according to generation. The conversion coefficient representing the yield of a notional account scheme does not apply to all of the members of the scheme but to each generation at each age of pension calculation. Unlike a points scheme where the conditions of purchasing a point are known *ex ante*, the purchase conditions of an annuity in a notional scheme are only known *ex post* at the moment of pension calculation. This amounts to buying a deferred life annuity in a points scheme and an immediate life annuity in a notional account scheme.

Piloting the schemes

Piloting a scheme involves maintaining an economic equilibrium over the long term, especially in the face of demographic and economic developments which may affect resources. While piloting in a points scheme is exogenous and carried out by the managers with a yearly determination of parameters, notional account

schemes are self-regulating and react to trends. By including life expectancy increases in the parameters, the actuarial yield of a scheme adapts automatically to demographic changes. Numerous criticisms though have been levelled at these schemes, indicating that they are not immune to demographic shocks.

The first controversy concerns setting up arrangements for financial self-regulation to the detriment of a more outward looking socially oriented management. In unfavourable demographic and economic conditions a notional account scheme might be tempted to pay benefits that are so low as to oblige the State to provide help in the form of a minimum guaranteed pension. The question has been raised in the case of the Swedish pension system.

To be self-regulatory, notional account schemes should be extremely flexible and reactive. Some countries though have introduced elements of rigidity to their systems. For example, capital conversion coefficients for annuities in Italy were formulated using 1990 mortality figures and these can only be legally revised every ten years although life expectancy at age 60 continues to rise. A strict actuarial neutrality is thus not respected and individual ageing is only partially taken into account in pension calculation. The measure reduces the efficiency of automatic corrective mechanisms and is one of the main factors for the schemes' surplus costs. The rigidity of the Italian system also comes from pension adjustment rules. While a withholding discount ratio of 1.5% is based on growth of GDP, pensions evolve like prices. If GDP evolves at more or less than the 1.5% norm, the scheme may drift out of balance (with permanent surpluses or deficits).

A political risk might arise due to the permanent nature of the parameters. Set up in a way to ensure the long term equilibrium of the scheme, the parameters must remain permanently unchanged. However, notional account schemes are not always established in a way that optimises their self-regulatory capacity. Moreover, their logic might be sorely tested by politically

inspired changes. Italy is a good example. A possibility of retirement at age 57 to 65 with neutral actuarial coefficients will be replaced by an age of 60 for women and 65 for men in

2008. Thus, in modifying the parameter for the age of retirement, Italy has broken with the logic of flexibility of the reform of 1995 which introduced notional account schemes.

The prize winners for 2007

The jury has awarded prizes for two of the eight submissions received in 2006.

The Thesis Prize of 4,000 to Antoine Bozio for his doctoral thesis in economics “*Réforme des retraites : estimations sur données françaises*” (Pension reform: estimation based on French data) carried out for the *Ecole des Hautes Etudes en Sciences Sociales*, under the supervision of Thomas Piketty.

The Dissertation Prize of 3,500 to Benjamin Laurent for her dissertation “*Réflexions concernant l'évolution du cadre réglementaire des régimes de retraite paritaires de la Branche 26 (régis par l'article L.932-24 du Code de la Sécurité sociale)*” (Reflections on the regulation of pension plans known as the “Branch 26 system”) carried out for a diploma of Actuary of Lyon University, under the supervision of Denis Soulatges.

To participate, submissions (in French) should be sent as of now, closing date is December 31.

The aim of the Observatoire des Retraites Prize is to encourage studies and research in the area of retirement.

Theses, dissertations and other works should contribute to the understanding of retirement in disciplines such as history, economics, law and political science.

The jury is composed of scholars and experts and presided by Professor Philippe Langlois, emeritus Professor in Law of Paris X University. The jury is looking for originality and novelty of thinking as well as timeliness of the subjects under consideration. It usually meets during the course of the first quarter of each year and prizes are announced before the summer.



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