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IS A REFERENCE AGE NECESSARY IN A POINTS PENSION SYSTEM?

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An important feature in the debate on French pensions reform is whether or not it is necessary to keep a reference retirement age in the new system. This brief aims to contribute to the debate by clarifying certain ambiguities about the concept of retirement age and by discussing the potential implications of implementing a points system. We stress the difference between the impact of reference ages in the current system – those ages changing the pension scale of the system – and implementing reference points in the new system, such points playing a useful part in informing the future pensioners. Recent economic literature has highlighted the part played by reference points in pension scales, beyond providing purely financial incentives. This would argue in favour of the new system keeping a target to which the future pensioners can refer. Rather than a single pivotal age for everyone, this brief advocates introducing a reference norm that is defined by obtaining a target replacement rate, e.g. 75 % of the last salary before retirement. Such a reference would lead to defining an individual full-pension age, adapted to each career. This would also be a return to the initial goal of a pension system, namely to maintain standard of living on retirement. Such an age reference could also be accompanied by new services for helping future pensioners prepare their retirement choices better.

- In a points system with a defined yield, the age at which entitlements can start being drawn is no longer a parameter that balances the system. It is a safeguard that aims to avoid people retiring too early, on pensions that are too small.
- In such a system, a pivotal age or a reference age has no impact on the financial equilibrium of the system, because the scale shifts automatically with life expectancy.
- Recent studies show that, in choosing when they retire, future pensioners are sensitive to the existence of a reference norm as regards retirement age. This would argue in favour of keeping a normative reference in a points system.
- A reference defined at individual level, such as obtaining a target replacement rate, would make it possible to define a reference age indicating to future pensioners the time at which they can retire with a pension level sufficient to maintain their standard of living in retirement.



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Some of the public debate on the promised pension reform has focused directly on the role of retirement age. Various political leaders have expressed their desire to see average retirement age rise in order to balance the system. To achieve that objective, some people have stressed the need to put up the legal retirement age. Conversely, the French High Commissioner for Pensions Reform, Mr Jean-Paul Delevoye, has defended the idea that the reform should not change the age at which entitlements can start being drawn (62 today) but that it could keep a reference to a pivotal age, which could rise. This brief discusses the arguments and the empirical evidence about whether or not a reference age should be kept in the new system. Before presenting the scientific work available on this topic, it is important to clarify what is meant by the term “retirement age”.

What does “retirement age” mean?

Retirement age is central in the debates about the pension system and possible reforms to it. However, those debates are clouded by a number of confusions that we endeavour to clarify below.

Three distinct concepts for “retirement age”

Prima facie, retirement age is a simple concept designating the age at which we cease to work in order to retire. But in reality, “retirement age” is a term that can designate several distinct concepts: i) the age at which a person ceases to work; ii) the age at which pension entitlements start being claimed; or iii) the legislative references to age in the pensions scale, such as the age at which entitlements can start being drawn.

The claiming age at which a person starts claiming their pension (i.e. the time at which their pension is calculated and starts being drawn for the first time) does not always coincide with the time at which that person stops working. For the generation (cohort) of 1938 in France, it has thus been observed that the average age at which work ceased was 58.8 years, while the average age at which pensions started being claimed was 60.5 years, i.e. a difference of over one and a half years (Aubert, 2009a). This difference can be explained mainly by periods of pre-retirement or of unemployment between the time at which people stop working and the time at which they start drawing their pensions.

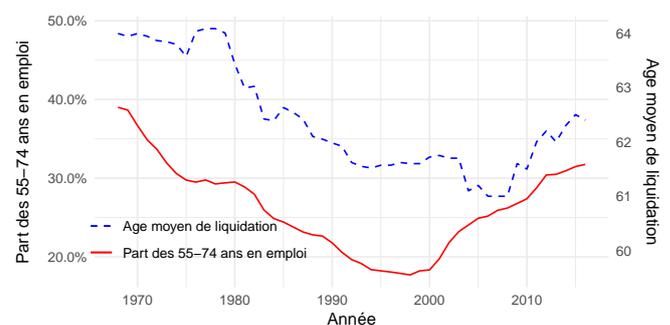
Finally, these two concepts should not be confused with the age parameters of the pension system - age at which full pension can be drawn, age at which pension entitlements can start being drawn, or indeed age at which the deduction for early retirement ceases to be applied - it being possible for people to leave the labour market or claim their pensions before or after those legislative ages.

Age is not a management lever

The financial equilibrium of a pay-as-you-go pension scheme depends on three main factors: the level of the pensions paid out, the contribution rate, and the ratio between the number of contributors and the number of pensioners. Conventionally resulting from these factors (see, for example COR, the French Pensions Advisory Council, 2015) are three main levers for managing the system in a context of increasing life expectancy: raising the contribution rate, lowering the pensions level, or raising the actual retirement age. The latter of the three levers is particularly attractive: only a rise in the retirement age makes it possible to maintain the standard of living for pensioners without increasing the share of public spending for pensioners.

Raising the retirement age has thus been a central goal of the pensions reforms of the recent decades, with a certain amount of success, as shown by figure 1. For the period from 1968 to 2017, it shows the variation in the average claiming age compared with the percentage of 55-74 year-olds in employment. After a big drop from the late 1960s to the mid-1990s, the senior citizen employment rates took an upturn and then climbed back to their mid-1970s level by the end of the period. The causes of this turnaround are still being discussed by economists, but there is little doubt that the successive pensions reforms have contributed to a large extent to the rise in the age at which people stop working in France.

Figure 1 – Mean claiming age and senior citizen employment rate



Source: CNAV; Enquête Emploi (Employment Survey), Insee.

For all that, and this is an essential point, retirement age is not strictly speaking a “lever” for managing the pensions system that is available to public policy makers. Unlike contribution rate, which can be determined directly by the legislator, the average age at which pensions start being claimed is not a parameter of the system. It depends on individual decisions – employment supply and demand – that are determined by a range of factors, one of which is the scale that applies in the pensions system.¹

¹Among the many other factors, we might mention pre-retirement schemes, unemployment benefit, disability and incapacity for work ben-

Box 1 : The scale of the current system

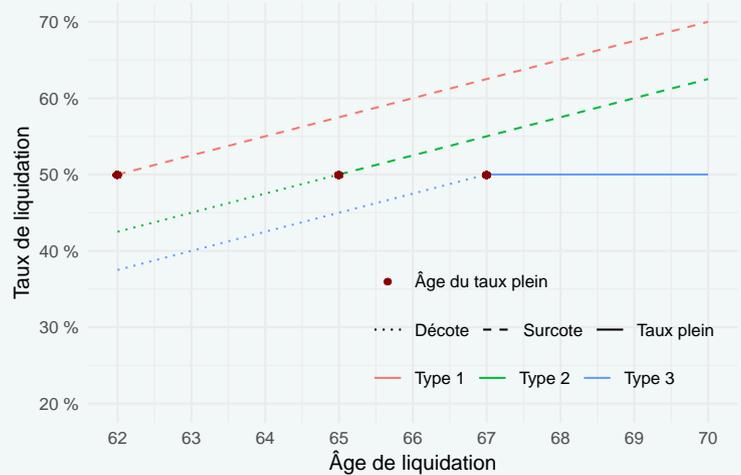
The parameters

The pension system's scale, i.e. the formula for calculating pensions, combines a career pathway (employment, salaries, pension-claiming age) with an amount of pension. The scale therefore depends on a set of legislative and regulatory parameters, the main ones of which are:

- a reference calculation rate, i.e. a theoretical replacement rate, (full pension): 50
- age at which entitlements can start being drawn: 62 (except for public sector and special-scheme sector workers);
- number of years of contributions for a full pension: 41.5 years for the generation (cohort) of 1957;
- age at which the deduction for early retirement ceases: 67 (except for public sector and special-scheme sector workers);
- the reduced rate (deduction) for early retirement and the extra pension (premium) for late retirement: 5% per year short or per year extra relative to the full-pension age.

The shape of the scale

In the current system, the shape of the scale depends on the individual career. This is illustrated in the figure opposite that shows the calculation rate (theoretical replacement rate) as a function of retirement age, for various typical cases. We will consider only continuous careers covered by the general social security pension scheme, differing only by their lengths. Type 1 reaches entitlement-drawing age (62) after having already validated the target number of years of contributions, and therefore obtains a full-pension rate (50%) as of that age, the scale then offering them an extra amount of 5% per extra year in work. Type 2 reaches the target number of years – and therefore full pension – at 65. Finally, for type 3, the target number of years is never reached before they are 70, and their pension is thus reduced by the maximum amount at 62, that amount gradually decreasing until full pension is reached at the age when the deduction ceases to be applied, and they are not offered any extra amount for staying in work beyond that age.



The impact of the parameters of the claiming age

To change the claiming age, the legislator can act on these various parameters.

The relative significance of the various levers then depends on the share of the population reaching full-pension rate at different times. Today, the measures for raising the age at which entitlements can start being drawn are having strong effects due to the size of the share of future pensioners who obtain full pensions as of 62. The effect of such reforms might be less significant in the future as the number of years of contributions validated at a given age decreases (people entering the labour market later and staying in it less continuously) and as the target number of years for full pension increases (COR, 2017). Conversely, the measures for raising the number of years of contributions or the age at which the deduction for early retirement ceases could have more significant effects in the future, if the proportion of people affected (types 2 and 3) increases.

The pensions scale is the genuine "lever"

The pensions scale determines a pension amount for a given claiming age, on the basis of a set of parameters (see box 1 for the current system). It is this tool that can be considered as one of the levers of the system. If a person retires before full-pension age, the calculation rate for calculating pension as a percentage of salary is reduced by applying a deduction, and if they retire after that age, it is increased by applying a premium.

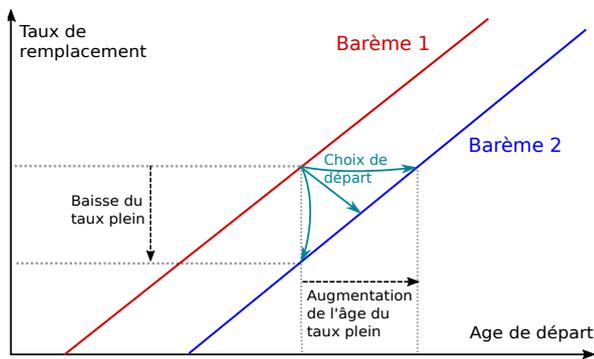
Figure 2 shows, in simplified manner, the scale of the current pension system to illustrate the equivalence in terms of financial incentives between measures for lowering pensions or measures for raising the full-pension age.²

The graph shows two reforms of the pensions scale: the first is a lowering of the full-pension rate at a given age, which leads to scale 2, shifted downwards relative to initial scale 1. The second reform is a rise in the full-pension

²We assume a full-pension age common to everyone. We are leaving aside significant elements of the scale such as the double condition of age and of number of years of contributions for determining the calculation rate, or the interaction with solidarity systems such as minimum pensions, which can generate additional non-linearities in the scale.

efit schemes, or indeed how the senior labour force is managed in companies, etc.

Figure 2 – Effects of raising the full-pension age and of lowering the full-pension rate on financial incentives



age (without changing the full-pension rate), leading to a rightward shift to reach scale 2. The two reforms thus have an identical impact on the scale, i.e. on the financial incentives for retiring. The individual retirement choice will, in both cases, depend on the way the affected individuals react, either by putting off retirement to a later age, or by accepting a lower pension level.

This almost tautological observation – raising the full-pension age to have a given pension level is equivalent to lowering the pension level for a given age – would appear to need recalling in the context of the debates about the reform being prepared, during which these two options are sometimes presented as being alternatives for financially balancing the system.

From the point of view of the pensions scale, lowering the pension at full-pension age is equivalent to increasing the full-pension age at a given pension.

In reality, there are only two genuine “levers” for the pension system: the contribution rate, which determines the overall level of the replacement rates under the constraint of achieving financial equilibrium; and the system’s scale, which expresses the relationship between claiming age and pension level.

What does the scale of a points system change?

The pension system currently being considered for the reform is a pay-as-you-go defined-yield points system, in which the pension is calculated as a function of the contributions over the entire career and as a function of specific non-contributory entitlements. In all of such systems (points systems or Swedish-like notional accounts systems), the monthly pension is calculated after applying a scale that converts the accrued entitlements into

annuities. This scale can be represented in the form of a conversion coefficient that depends on generation cohort (year of birth) and on retirement age. Over the generation cohorts, if life expectancy at retirement rises, the scale shifts rightwards, implying a later retirement age for maintaining the same pension level (see box 2).

In reality, such a scale is close to the current system of deductions (reduced pension) and premiums (extra pension) that are defined relative to the full-pension age: the more the future pensioner defers their retirement, the more their average pension increases. The idea is to give back to the future pensioner the amount of pension that they have not received by retiring later in the form of a higher pension. It is the concept of actuarial neutrality, which implies that regardless of the choice of the future pensioner – retiring earlier or later – the equilibrium of the system is guaranteed.

The scale of the new system differs from the current scale in that it is defined for each cohort as a function of the retirement life expectancy of that cohort.

The main difference relative to the current scale is the fact that the new scale is defined for each generation cohort as a function of the retirement life expectancy of that cohort. When life expectancy increases, the scale shifts rightwards in order to guarantee the equilibrium of the system regardless of the retirement choices of the future pensioners.

Certain critics of the reform being considered fear that the new scale might lead to retirement that is too early, and thus to a retirement age that is too low to ensure the system remains balanced. Figure 2 reminds us that changing the scale has equivalent consequences on the financial equilibrium by lowering the pension level for a given age, or by raising a pivotal age, because the financial incentives are identical.

However, the fact that the financial incentives remain unchanged does not imply that the retirement behaviours are the same regardless of the way the change of scale is presented. On the contrary, it is possible to consider that people might change their behaviour depending on the way the change is presented, in particular if reference is made to an age norm or to a replacement rate norm. Maintaining a reference age would thus be relevant if people take their retirement decisions on the basis of the reference ages of the system, not for balancing the system, but rather for encouraging the future pensioners to retire with sufficient pensions.

Box 2 : The scale of a system having a defined yield

In a points system having a defined yield, the scale defining the amount of pension at each age is calculated to offer an amount of pension at each age such that the equilibrium of the system is guaranteed. Such systems are said to have “defined yields” because what is defined is the ratio between the pensions received and the contributions initially paid.

In such a system, the amount of the pensions is obtained by applying a conversion coefficient to the sum total of the accrued points. That coefficient defines the core of the pensions scale: for each generation cohort, and for each age, it determines the conversion of the accrued entitlements into monthly pension. As in the current system, the pension increases with increasing claiming age – to offset a shorter length of retirement.

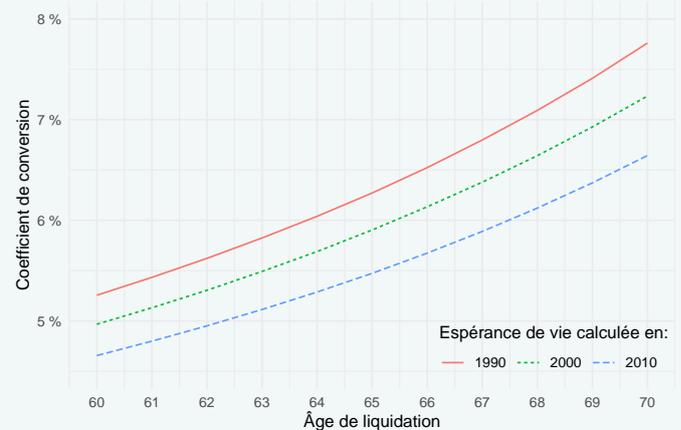
1. The conversion coefficient depends negatively on the life expectancy at the time the pension starts being claimed.
2. The lower the scheduled revaluation of the pensions, the higher the conversion coefficient.

Even if it is not directly comparable to the calculation rate of the current system, the conversion coefficient dictates the shape of the scale of the defined-yield system. The Figure opposite shows the value of this coefficient as a function of claiming age for life expectancies measured at different periods (1990, 2000 and 2010).

Thus, on the basis of the life expectancy measured in 1990, a person claiming their pension at 62 would have a conversion coefficient slightly higher than 5.5%. In 2010, that conversion coefficient decreases to 5.0%, in order to reflect the increase in life expectancy over that period.

As in the current system, the person thus faces a scale that increases with age, but the variation in the coefficient is not linear: at 62, delaying retirement by one year implies a variation, in percentage, that is smaller than delaying it by one year at 65.

In conclusion, the scale of the defined-yield system is the same for all of the individuals in the same generation cohort, whereas it differs according to the differences in numbers of years of contributions between individuals in the current system. However, number of years of contributions is taken into account in the defined-yield system, via accruing of points.



What do we know about individual retirement choices?

The effect of the scale: the role of financial incentives

In general, the reactivity of retirement behaviour to changes in the reference parameters of the system is significant, both for number of years of contributions (Aubert, 2009b; Bozio, 2011) and for full-pension age (Mastrobuoni, 2009). However, that reactivity combines two effects: firstly a reaction to the financial incentives for putting off claiming,³ and secondly the reaction to the reference age being shifted.

Other research has therefore attempted to isolate the "pure" effect of financial incentives, by studying reforms

changing the financial incentives that are not associated with a normative change in the system (Benallah, 2010; Manoli and Weber, 2016; Brinch, Vestad, and Zweimuller, 2015; Gelber, Isen, and Song, 2016). In general, those articles find significant effects for such reforms on retirement behaviour, but those effects are associated with low elasticities – the relative variation in retirement age compared with the relative variation in pension – because the changes in the financial incentives, calculated over the entire length of the retirement, are very large.⁴

The effect of reference age: the role of norms

Finally, a recent piece of literature endeavours to quantify the relative significance of financial incentives relative to the effects of norms. Brown (2013) and Seibold (2016) thus confirm that financial incentives do indeed have a

³These financial incentives are of two different types: lowering the amount of pension and shifting points of discontinuity producing incentives to retire at exactly the reference age.

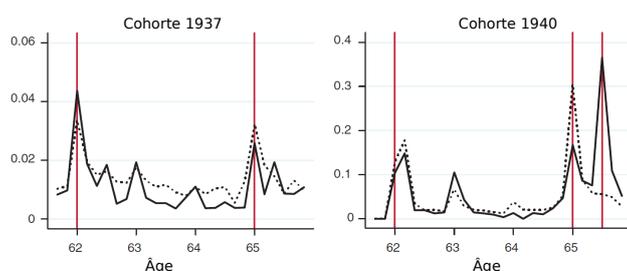
⁴For any given behaviour, a more limited variation in the financial incentive would lead to higher elasticity being measured in the retirement behaviours relative to the changes in financial incentives.

significant effect on individual decisions, but that the effect of reference ages is more significant. The argument that the average retirement age can be managed better by defining reference targets is thus corroborated by the economic literature.

However, the mechanisms at work behind such behaviours are not explained. Two main types of explanation can be put forward, with different consequences in terms of public policies. Firstly, the key ages can constitute (i) norms regarding retirement age that are disseminated across society, and to which individuals conform without necessarily questioning them. Secondly, such ages per se, or the replacement rates that are associated with them, can constitute (ii) references and expectations for future pensioners. In their trade-offs and choices, they might then give more weight to negative differences in such references (Tversky and Kahneman, 1991), and thus retire once those references have been reached.

What does the economic literature tell us about this point? Behaghel and Blau (2012) show that the shift in the retirement age observed in the United States (figure 3) is due to the Social Security reform implemented in 1983 that gradually increased the full-pension retirement age from 65 to 66. According to the authors, that behaviour can be explained by the fact that the best-informed/best-educated individuals consider the full-pension age as a reference point before which they refuse to retire.

Figure 3 – Effect of a rise in full-pension age without the financial incentives changing (United States)



Interpretation: The cohort of 1937 benefits from a full-pension age of 65, while that age is 66 for the cohort of 1940. We observe that the retirement peak at 65 shifts to 66, while the financial incentives for putting off retirement have not changed.

Source: Blau et Behaghel (2012), Fig. 2, p. 50.

However, various articles have shown that the best-informed people are also the most reactive to financial incentives (Chan and Stevens 2008). This apparent paradox – the best-informed individuals react to a greater extent both to financial and to non-financial incentives – is consistent with the loss aversion assumption: individuals take financial incentives into account, but give a lot of weight to deviation from or shortfall relative an expected reference. This would argue in favour of putting in place a scale in which the financial incentives are clearly legible,

but that also maintains an explicit reference.

What part should norms play in a points system?

In view of the importance attached by recent literature to reference points in retirement decisions, it can but be agreed that it is important to maintain clear references for future pensioners, in order to facilitate a decision as important as the right time to retire. It remains to discuss which indicator should be the one to which the norm relates: retirement age, length of career, or indeed target replacement rate?

Pivotal age or individual reference age?

In the discussions that have taken place during the preparation of the reform, the concept of pivotal age appeared as one of the proposals studied for meeting the need to maintain a retirement age norm and thus to avoid people retiring too early. The pivotal age works by indicating, in the scale, a reference age corresponding to a certain conversion coefficient level. As the generations (cohorts) go by, the rightward shift of the scale would correspond to a rise in the pivotal age. In such a context, the pensions scale remains unchanged, but the reference age emphasises the rise in the retirement age (at a given pension level) rather than the lowering of pensions (at a given age).

The drawback with having a pivotal age as a reference age is that that age is identical for all future pensioners, regardless of the lengths of their careers. In the current system, a second norm – the number of years of contributions required for full pension – was added to offer a partial correction and to obtain an individualised reference age, dependent in a complex way on the number of years of contributions and on the age boundaries (62 and 67).

If we return to the goal of a pension system – namely to guarantee standard of living is maintained on retirement – it is the replacement rate, i.e. the ratio between the pension and the last salary, that should be the reference to be achieved. The reference age should thus be the age at which the target replacement rate is reached, a kind of "new full-pension age".

How should the reference age be defined?

Without changing the scale, it is thus possible to define an individual reference to the age at which each future pensioner obtains a replacement rate deemed to be sufficient. In the current system, the average replacement rate is estimated to be 75 %. That reference could therefore be maintained, and the full-pension age could be de-

defined as the age at which the ratio between pension on claiming and the last salary is 75 %. With the rise in retirement life expectancy, that full-pension age would increase gradually in order to indicate to future pensioners what retirement age would guarantee for them the same relative standard of living as today.

The reference age should be the age at which the replacement rate that is deemed to be acceptable for guaranteeing the standard of living of pensioners – e.g. 75 % – is obtained.

The advantage of such a reference age is that it is not only a norm whose effects on retirement behaviours can be powerful, but also an individual reference that depends on the career of each future pensioner. Unlike a pivotal age, the age at which future pensioners reach a 75 % replacement rate is earlier for those who have had long and not very dynamic careers, and later for those who have had more dynamic careers. Calculating an individual replacement rate poses no problem for all those future pensioners who have had stable careers and whose last salary is representative of their reference standard of living. For employees who have had end-of-career interruptions or who have gone over to working part time, the reference of the last salary should be adjusted – e.g. by calculating the replacement rate relative to full-time equivalent salary.

A reference age to be supplemented by a genuine service to future pensioners

The age norm proposed here is of a type very different from the full-pension age in the current system in the sense that changing it in no way changes the pension entitlements. It is merely a very clear piece of information, given by the system on "the right time" for retiring. It can be likened to giving a "nudge", i.e. an encouragement, to aim for a certain replacement rate, without penalising overly any individuals who deviate from the norm (cf. Thaler and Sunstein, 2017).

This reference point could be advantageously supplemented with information for future pensioners in the form of a smart-phone app called "maretraite.fr" indicating the amount of pension according to the possible retirement ages. The full-pension age could be indicated in green, and the earlier ages in red, with additional information about the implications in terms of standard of living. If a future pensioner decides to retire with a replacement rate deemed to be too low, an interview with an advisor from their pension scheme might be deemed necessary.

The role of the pension schemes should be reinforced so as to advise future pensioners in preparing their retirements.

Development by the pension schemes of a range of services related to preparing well for retiring (preparing a gentle transition towards not working, helping with the financial choices implied by retirement, adapting work to take care of health, care insurance for situations of loss of independence, etc.) could take place concomitantly with mere provision of information.

Conclusion

In a defined-yield system, be it a points or a notional accounts system, the age boundaries no longer play the part of determining a scale for pensions: the legal retirement age no longer has any impact on the equilibrium of the system and should no longer be a subject of public debate. The scale changes as the generations (cohorts) go by in order to maintain the conditions for long-term equilibrium of the system.

However keeping a reference age in the system is not a bad thing in view of the significance for retirement decisions of the existence of a reference point.

Rather than introducing a pivotal age that is identical for all employees, this brief advocates selecting a reference in terms of target replacement rate, e.g. a rate of 75 % of the last salary, which would determine a "new full-pension age" in the universal system currently being considered.

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