

Report on

“Notional Defined Contribution (NDC) pension schemes and income patterns”

by Nisticò and Bevilacqua

Context and summary of the paper

During the '90s, two important European countries, Italy and Sweden, have radically reformed their public pension system. They have adopted the Defined Contribution (DC) award formulas while retaining the Pay-as-you-go financial arrangement. The result of such an implant is the so called Notional Defined Contribution (NDC) scheme, whose ambition is to ensure actuarial fairness - intended as uniformity of *ex ante* individual rates of return on contributions - and automatic financial sustainability without having to meet the costly transition to a fully funded scheme. The rather limited theoretical debate about the properties of the new scheme has inevitably been out of reach of many pension experts and of those actors, namely workers and trade unions, who tend to interpret the novelty as a highly complex tool, whose aim is simply that of curbing pension expenditure. As a consequence, many critics of the new scheme overlook its positive impact on fairness and concentrate on its goal to achieve financial stability as conflicting with that of ensuring social sustainability of the pension provisions.

The aim of the paper by Nisticò and Bevilacqua is to shed light on the intricate issue of the relationship between alternative income patterns – distinguished according to length and profile – and the pensions awarded by the NDC schemes for different contribution rates, retirement ages and vectors of the yearly conventional rates of return credited on all pension accounts. The paper is organized as follows.

The introduction discusses the possible notions of “adequate pensions” from the viewpoint of the members of a pension plan, to emphasize that an NDC scheme departs from the traditional earnings related pension schemes, in that it: a) does not aim to award uniform replacement rates to different individuals; b) allows for flexible retirement patterns; c) tends to reward the compulsory savings with a uniform rate of return that, if

appropriately chosen, can ensure automatic sustainability, for any (regardless of the) contribution rate.

Section 2 identifies a “benchmark case”, namely that of an individual whose wage grows (constantly) in line with the (constant) rate of return credited on all pension accounts. In such a benchmark case, the authors show that all yearly pension contributions have the same weight within the account balance at retirement. On the other hand, for individuals whose wage growth exceeds the rate of return, the late contributions weigh more than the previous ones; and vice versa for individuals whose wage grows at a lower rate. The authors use these three cases to assess the impact of ‘early’ gaps in the contributive history relatively to ‘late’ gaps.

Section 3 is devoted to a sensitivity analysis of the replacement rate (measured as a ratio between the first pension annuity and the last wage) with respect to the three variables affecting the level of pensions in an NDC scheme, that are (i) the contribution rate, (ii) the career length (the retirement age) and (iii) the conventional rate of return yearly credited on pension accounts.

As to the first, the authors show that, with reference to benchmark case, the replacement rate is a linear function of the contribution rate. The slope of the line is equal to the ratio between the working period and the annuity divisor corresponding to the chosen retirement age. For flat-careers the slope is higher, while it is lower for fast-rising careers. As to the second, the authors distinguish between the positive impact on the replacement rate of an extra working year *for a given retirement age*, and the greater impact of an extra working year accompanied by a postponement of the retirement age (Equations 7-9).

As to the third, the result is that any change in what the authors call the ‘economic component’ of the rate of return (the average wage growth) has no impact at all on the replacement rates, while a positive impact can derive only by a rise in the ‘demographic component’ of the rate of return.

Overall evaluation

The paper deserves publication. It touches upon a yet unexplored feature of the NDC pension schemes. Its structure and argument are at the same time analytically sound, clear and consistent with its declared aim.

Some suggestions

- The final part of the introduction could be expanded to offer the reader a better guide about the roles played by sections 2 and 3.
- The authors could emphasize that the differences in replacement rates for the three careers is more important for higher levels of the contribution rate (Figure 2).
- Equation 5 shows that the replacement rate can be raised by adopting higher technical rates embedded (through the annuity divisors) within the first pension installment. The authors could emphasize that such a choice implies lower adjustment rates (as their Equation 1 clearly shows) with a positive impact on one dimension of adequacy (the replacement rate) and a negative one on another (the adjustment rate).
- The incentive to postpone retirement (see equation 11 and Table 5) should be recalled in the conclusions as a strategy alternative to the rise in legal retirement age, typical of DB schemes.