Notional Defined Contribution Pension Schemes and Income Patterns − by Sergio Nesticò and Mirko Bevilacqua

Economics Discussion Papers, No 2012-58, Kiel Institute for the World Economy.
http://www.economics-ejournal.org/economics/discussionpapers/2012-58

Referee comments by Edward Palmer

Many now see NDC as a way forward for public pension schemes, especially for countries with existing pay-as-you-go commitments,[1] i.e., most of Europe, but even as a start-up scheme in emerging economies. What makes Notional or - Non-financial – Defined Contribution pension (NDC) schemes attractive are, if properly designed, the properties of sustainability and actuarial fairness.

What is NDC? NDC is a lifetime account scheme, like financial defined contribution personal account scheme, that transfers consumption from the present to the future. Like defined contribution schemes NDC accounts are illiquid until retirement, when balances are converted into annuities using a divisor based on projected birth cohort longevity. Unlike financial DC schemes NDC cannot create financial saving.[2]

How is financial balance and sustainability accomplished? Indexation with the internal rate of return, proxied by the rate growth of the covered wage bill, and the use of projected birth cohort life expectancy (LE) in computing an individual's annuity[3] are what is necessary to maintain a fixed contribution rate over the long term. In practice, adjustment is necessarily a discrete process. In addition, policymakers in countries expecting positive long-run labor force growth may find it more attractive to index to average covered individual wage growth, leaving adjustment to negative labor force growth and, if it occurs, the consequences on finances of underestimated life expectancy, to a solvency ratio and balancing rule. The balancing mechanism, if symmetric, would thus distribute both positive and negative deviations from a unitary ratio of assets to liabilities, a situation where estimated assets cover estimated liabilities. Sweden is the only NDC country to follow this approach, albeit the Swedish balancing mechanism only kicks in when estimated assets fall below liabilities.

The present paper, by Sergio Nesticò and Mirko Bevilacqua, abstracts from the issue of sustainability and address the question of how life income patterns affect replacement rates in NDC. In doing this, the authors also demonstrate the central issues of NDC and adequacy.

Three properties of NDC are important for understanding replacement rates. First, the contribution rate and, second, the rate of return in any discrete time period are the same for all. Thirdly, a uniform birth-cohort divisor is employed to calculate a life annuity for all

[1] Notably, one of the most recent is *The Economist*, "Free exchange - The autopilot solution", February 2 issue, page 62.
[2] That said, however, whether compulsory financial saving schemes create net national saving depends on the behavioral responses of individuals regarding their personal saving.
[3] As long as the expected value of projected LE equals the outcome over a number of cohorts.

members of the same birth cohort. Since, NDC is a lifetime account scheme, two members of the same birth cohort with the same account balances at retirement, will receive the same life annuity.[4] Put differently, there is no tax wedge; the economic counterpart of actuarial fairness.

In NDC, two individuals from the same birth cohort (hence with the same life expectancy) who have accumulated the same account balance receive the same pension at any given retirement age, regardless of the earnings careers that lead to these balances. This point is demonstrated resoundingly by the authors. It follows then that, In NDC, even though account balances are the same, the worker with the highest final wage at retirement will by definition have the lowest replacement rate with respect to this final wage.

As the authors point out, the practice of relating the individual (micro) benefit to final salary is a holdover from the thinking underlying many defined-benefit schemes where, given some qualifying rule, benefits are in fact based on the individual's final salary or an average of salaries close to the retirement age and, thus, have only a weak link to individual lifetime contributions. It seems reasonable to claim, thus, that NDC is much more relevant in determining adequacy of individual benefits as an equal level of notional assets is consistent with different earnings profiles, an approach that is also more in line with modern labor markets. One of the authors' examples illustrates just this with an earnings career where the worker's earnings curve declines towards the end of the working career, for example, owing to a reduction in labor supply, possibly associated with gradual retirement, also an enabling feature of NDC.

Adequacy in NDC is determined by setting the contribution rate so as to give an adequate pension for the average worker, as the authors also discuss. What is the "adequate" contribution rate for an NDC scheme? Of course there's no generic answer to this question. This is because the adequate scale depends on the rest of a country's pension landscape. In some countries, for example Italy, the NDC scheme stands alone – as *the* single pension scheme. In another NDC country, Sweden, NDC is one component in a multi-pillar overall system. In Sweden, about 90 percent of employees receive an occupational supplement to their NDC pension, where the policymaker has envisaged that these two together should yield an adequate pension. In addition, in Sweden there is a ceiling on contributions that give pension rights in the public scheme, leaving room for a private supplement above the ceiling, which in Sweden is also covered by an occupational supplement and where occupational supplements are as a rule financial account (FDC) scheme, creating a mixed NDC-FDC portfolio.

One of the appealing features of NDC is that it enables the government to contribute to the individual accounts to create rights in addition to those that derive from contributions on individual earnings. As opposed to the non-transparent redistribution in the typical DB schemes of the past, the framework of NDC enables transparent, *targeted* redistribution: for example, to parents in conjunction with childbirth, but also to cover insured periods of sickness or unemployment. In addition, government can contribute to the accounts of individuals on disability benefits, financed with money transferred to the NDC scheme from the general budget. *Disability benefits* themselves are, thus, not a component of NDC. This way of thinking recognizes that the cost of providing old age pensions to disability beneficiaries is a component of the overall cost of disability. In addition, NDC countries

[44] And, to date, all NDC countries compute the annuity divisors based on unisex life expectancy data.

typically have guarantee benefits that top up the NDC benefit up to a stipulated social minimum pension level.

In sum, Nesticò and Bevilacqua provide valuable insights into what many of us consider unique and desirable properties of NDC schemes. They demonstrate clearly that “the” replacement rate is not a well-defined concept and why we should be careful with its use. Beyond this, what is important in the end in judging adequacy is the *overall framework* of benefits in a country, including rights determined by social policy and supported financially with government contributions “to” individuals’ NDC accounts.