

# **NDC Dynamic Equilibrium model with financial and demographic risks**

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## **ABSTRACT**

Classical social security pension schemes, combining a defined benefit philosophy and a pay as you go system, are clearly under threat taking into account the general demographic evolution of many countries for the next decades. An interesting attempt to solve this problem is to maintain the pay as you go mechanism but moving to a defined contribution system (notional accounts or NDC schemes). In order to implement such schemes it is necessary to define various parameters such as the notional rate, the annuity conversion price or the indexation procedure. All these choices are not neutral in term of stability of the system. The purpose of this paper is to present a 3 generations-model permitting to model the influence of the dynamic evolution of the financial and the demographic parameters on the equilibrium of a NDC system.

## **KEYWORDS**

Social Security, Notional account, Demographic Risk, Longevity, Actuarial Fairness

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