Goal-based wealth management and long-term individual financial planning

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We analyse the key elements of a dynamic investment-consumption problem faced in discrete time by a household over a long term horizon, under the following assumptions:

- A set of time-dependent goals distributed over time and distinguished in: *consumption goals* and *investment goals*. Those targets can either be self-financed or acquired with borrowing. We distinguish *retirement goals* from the former two, which hold as income targets defined at time 0 and valued at retirement age, 10 or 20 or 30 year from now, depending on the age of the decision maker.
- A planning horizon from current time to the retirement age along which the goals under point 1) are distributed and which include an estimate of average salaries, living costs, a liquidity buffer and the evaluation of an investment portfolio whose dynamics is of primary concern to the family: accordingly the family will decide whether to borrow or disinvest as time goes by.
- The problem is dynamic and stochastic since not only the labor income is random over a long horizon but definitely living costs will depend on inflation and portfolio returns as well as borrowing costs will change over time.
- Liabilities are limited to living costs and mortgages for real estate investments with fixed or floating rates however, while assets include mutual funds, pension funds and annuities plus cash.

We aim at evaluating the likelihood of targets achievement and the feasibility of selected targets with respect to the available resources within a risk-reward dynamic optimization model in which risk is just captured by the shortfalls of current wealth with respect to the input targets. The optimal policy generated by the optimizer under alternative targets assumptions is also of interest.

References

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