

# Analyzing aging, pensions, policy options and welfare

Making policy choices in the context of aging and pension reforms is more challenging than in the case of other areas of economic policy. Empirical analysis of the available data is by construction backward looking, whereas aging and pension systems concern generations ahead. Moreover, due to general nature of these This challenge may be addressed with the simulation models, such as the overlapping generations model, but constructing such models is time consuming and requires a composition of theoretical, modeling and data skills. FAME|GRAPE offers such a modeling tool – a state of the art overlapping generations model – prepared for the policy analysis. For some uses, the tool is distributed online (e.g. changing parametrizations of our earlier analyses, pension calculator under various policy options for lay-persons). For analyzing a variety of countries and pension system arrangements, our team can adapt and calibrate the tool to the specific conditions of a given country. Depending on a complexity and variety of policy options to be considered, we can provide such analyses within a month to a few months.

**The treatment of the consumers.** Consumers vary with age and longevity (conditional on birth cohort). They may also vary with endowments and preferences within a cohort. Consumers may experience income shocks (e.g. unemployment, health-related, etc.). Consumers may be time-inconsistent, i.e. fail to work as long as is optimal, fail to save as much as optimal, etc. Consumers work in (frictionless) labor market and lend savings to firms operating in (frictionless) capital market. Firms produce with Cobb-Douglas or CES production function, with perfectly competitive production factors markets.

**The treatment of the government.** Government may tax consumption, incomes and levy lump sum taxes. Taxes may be progressive. Government may issue debt in a closed and open economy context. There can be government sector consumption, which may enter utility function (e.g. consumers derive utility from roads and hospitals). The government finances the deficit in the pension system.

**The treatment of the pension systems.** The economy may have no compulsory pension system. If it is to have a pension system, it may be both funded and pay-as-you-go. In terms of the nature of the system, it may be both defined contribution and defined benefit. It is possible to model incentives for private long-term savings.

## Our tool can deliver analyses with the following questions and policy angles:

- fiscal and **macroeconomic consequences of aging** (using UN demographic projections or country level projections, we can also provide a comparison of various demographic scenarios in terms of economic outcomes);
- the effects of **parametric reforms** (contribution rate, replacement rate, indexation rate, retirement age, etc.); and the effects of the **systemic reforms** (introducing a pension system, replacing defined benefit with defined contribution or *vice versa*, introducing funding, downsizing funding, etc.). These reforms may be evaluated in terms of government budget (deficit, debt, taxation), labor supply, capital accumulation and output growth.
- **Distributional effects** of these reforms (which cohorts and which social groups gain/lose from the proposed reform options).
- **Income, consumption and wealth inequality** in the absence of the reform and for the subsequent considered policy reforms.
- Potential **political support** for the proposed reform options (share of population gaining/losing from the reforms, size of gains/losses, etc.).
- Long term **political stability** of the implemented reforms.

