

## **Demography and Economy: how they interact in Portuguese peripheral regions**

Topic: Regional input-output modeling 1

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This paper describes the general framework of an integrated demographic and economic model (DEMOSPIN), with a special focus on the economic block. DEMOSPIN has been developed by a Portuguese researchers' team, with the aim of forecasting population dynamics, up to 2030, in depressed Portuguese Peripheral Regions (PPR). PPR correspond to 14 NUTS III regions, where population is declining and ageing for several decades. Accordingly, the central ambition of this analysis is to uncover policy strategies to revert (or at least mitigate) these areas demographic decline.

The DEMOSPIN economic block comprehends several regional IO models, embedded in a SAM-type frame, with the purpose of projecting – under scenarios analysis – employment's evolution in PPR. One initial task involves building the SAMs for all these small PPR, as such data are not available in Portuguese official statistics. These SAMs are “domestic flows” tables, at basic prices, although as for the treatment of secondary products we opted for a rectangular-type model that preserves the Supply and Use structure (SUT), typical of National Accounts tables.

The key idea of DEMOSPIN is that there is a close connection between net migrations to and from PPR (for population under 65 years) and employment prospects. These net migrations, together with population natural increase, determine the PPR population with less than 65 years old. Population over 65 is contemporaneously exogenous at the economic side of the model. However, as population below 65 changes in period  $t$ , this therefore induces changes in the estimates for population over 65 for future periods, and has then an effect on the final demand addressed to the economy. This economic-demographic interaction urges a kind of dynamic overlapping generations model that is the DEMOSPIN cornerstone proposal.

Preliminary results on employment and population forecasts will be presented.