

The Potential Crisis of Population Ageing and Low Fertility: GEMTEE
Dynamic Computable General Equilibrium used in Population Forecasts and
Analysis

Hsing-Chun Lin, Huey-Lin Lee, 陳柏琪, Sheng-Ming Hsu, Kuo-Jung Lin, Duu-Hwa
Lee, Ching-Cheng Chang, Shih-Shun Hsu

International Business

Management

pochi@chu.edu.tw

Abstract

Based on the Cohort-Component Method, the Department of Manpower Planning, Council for Economic Planning and Development (CEPD) (2012) made population projections through the assumptions of fertility, mortality, and migration to calculate future population by age and gender groups, and took economic factors as exogenous variables. However, after Becker's work (1960), it is generally accepted that fertility is impacted by income and other economic factors, and that fertility is an endogenous variable. In other words, a population projection should consider economic factors before deciding fertility endogenously.

This article applies the population module on the General Equilibrium Model for Taiwanese Economy and Environment (GEMTEE), wherein fertility and mortality are decided endogenously. Moreover, this study projects the baseline population of Taiwan from 2012 to 2060, and evaluates the impacts of low fertility and aging problem to Taiwan economy.

Keyword: low fertility, population ageing, potential economic crisis, dynamic computable general equilibrium, and population prospects.