

The Differential Impact of Aging on Structural Change: Insights from Cross-Country Analysis Based on Income Levels

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12th June, 2026

Abstract

This paper examines the heterogeneous effects of population aging on sectoral employment reallocation across countries at varying stages of economic development. Using an unbalanced panel dataset of 59 countries spanning 1960–2018, we estimate a panel fixed-effects model in which the old-age dependency ratio serves as the primary explanatory variable for employment shares across agriculture, manufacturing, and services. To rationalize the empirical findings, we develop an extended overlapping generations (OLG) model incorporating hierarchical consumption preferences differentiated by age cohort, building on the non-homothetic utility frameworks of Matsuyama (2002) and Foellmi and Zweimüller (2008). The model generates age-specific demand structures in which older cohorts systematically shift consumption expenditure toward services, particularly health-related services, inducing labor reallocation away from industry. Empirical results confirm that aging accelerates tertiarization — the expansion of service-sector employment share — most prominently in high-income economies, consistent with the demand-side channel of structural transformation. In low-income countries, however, binding

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income constraints prevent full materialization of preference-driven sectoral reallocation, resulting in persistent agricultural employment retention. Middle-income countries exhibit ambiguous dynamics, suggestive of a structural transformation puzzle. These findings highlight that the demographic transition interacts with the level of economic development to shape the trajectory of deindustrialization and de-agriculturalization, with important implications for development policy and long-run labor productivity growth.

Keywords: Structural Transformation; Cross-country Analysis; Aging population; Human Capital.

JEL Classification: O11; O40; O57.