

The Measurement of Population Ageing

Yoko Kawada* Yuta Nakamura† Noriaki Okamoto‡

April 16, 2018

Abstract

Population ageing is one of the most serious problems in numerous developed countries. The level of population ageing is often measured by “usual” measures such as the share of the older population, mean age, median age, and the dependency ratio. However, these measures violate elementary properties for measuring population ageing. We propose a new measure of population ageing that overcomes drawbacks of the measures currently in use. We introduce a new condition called the *working age principle*, which is a sensitivity condition to thickness of the working age population. Our measure is the only measure that satisfies *monotonicity*, the *working age principle*, and the other standard axioms.

*Department of Economics, Keio University, Tokyo 108-8345, Japan; ykawada@keio.jp

†Graduate School of Economics, Keio University, Tokyo 108-8345, Japan;
ryock.you0223@gmail.com

‡Department of Economics, Keio University, Tokyo 108-8345, Japan; noriaki@a3.keio.jp