Consumption, Welfare, and Stochastic Population Dynamics When Technology Shocks Are (Un)tied $\stackrel{\bigstar}{\Rightarrow}$

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Abstract

The impact of uncertainty on consumption and welfare seems obvious; because of the precautionary saving motive, uncertainty reduces consumption, and subsequently, deteriorates welfare. Recent several studies, however, find that this intuitive narrative is not necessarily true. This paper provides the theoretical underpinnings for this. In the absence of technological progress, I find that the larger demographic shocks always reduce consumption, but improve the welfare of households. Moreover, when they are negatively tied to technology shocks, there emerges an inverted-U relationship between the size of two shocks and consumption, and a U-shaped relationship between the size of two shocks and household welfare. These results are all characterized analytically in the framework of the stochastic two-sector optimal growth model. The findings suggest that demographic policies should not be implemented with no reference to the state of technology.

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^{*}The current version of this paper, slides, and the computer programs are available upon request. *Email address:* mizuki.zard.musiclover@gmail.com (Mizuki Tsuboi) *URL:* https://sites.google.com/view/mizukitsuboi/home-page (Mizuki Tsuboi)