

On the Trends of Technology, Family Formation, and Women's Time Allocations*

Sagiri Kitao[†]

Kanato Nakakuni[‡]

June 29, 2023

Abstract

We develop a model that explains the secular trend of fertility, marriage, education and women's time allocations in Japan over the last fifty years. We use the model to quantify the effects of technological development and the costs associated with raising children on the time trends surrounding families. We let factor-biased technological progress determine the paths of gender and skill-specific wages, while allowing individuals to make decisions regarding family formation and allocation of time to market work, home production, leisure, and childcare. We find that skill-biased technological change contributes to a rise in fertility rates and investment in education. The growth of gender-biased technology has the opposite effect on the number of children, but increases educational attainment. Additionally, it leads to a decline in the marriage rate and an increase in married women's work hours. Neutral technological growth increases fertility, reduces education investment, and allows women to shift time from market work to childcare. A rise in the financial and time costs of basic childcare reduces fertility rates but increases skill investment, while a rise in education costs has the opposite effect.

Keywords: Fertility, Marriage, Home Production, Women's Time Allocations, Skill-biased Technological Change, Gender-biased Technological change, Japan.

JEL Classification: D10, E10, J10, O11

*Kitao acknowledges financial support from the Grant-in-Aid for Scientific Research: International Leading Research 22K21341.

[†]University of Tokyo, Research Institute of Economy, Trade and Industry. Email: sagiri.kitao@gmail.com

[‡]University of Tokyo, Email: k-nakakuni@g.ecc.u-tokyo.ac.jp