

Econometric Analysis of Birth, Marriage, and Labor Market

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The purpose of this study is to describe relations of birth, marriage, labor participation, and macro-economic performance in recent Japanese society, and to calculate the effects of some policy changes on birth rate and first marriage rate of young women using econometric model. Our model has four main blocks such as birth block, marriage block, labor market block, and macro economy block, and is constituted of fifty-eight equations estimated by OLS and eight exogenous variables including policy ones in all.

Since some prior studies found out that the late marriage of young women was a main cause of decreasing birth rate, we regard this as the most important factor to construct the structural equations of birth rate. Moreover, we considered income and price effects on fertility and set up them as explanatory variables in structural equations of birth rate according to basic consumption theory of microeconomics. In marriage block, we utilized a relation between a motive of marriage and participation in labor market of young women for principal explanatory variables to determine a behavior of marriage. In addition, some macro-economic variables such as income per capita or demand for labor etc. are included in the model to show the effects of total population change caused by birth rate change on macro economy.

To calculate the effects on fertility and marriage behavior by policy change, we prepared four simulation cases as;

- 1) Case 1: Increase the capacity of a day nursery 50% more.
- 2) Case 2: In addition to Case 1, improving the marriage costs for couples.
- 3) Case 3: In addition to Case 2, reducing the negative relation between recent tendency of birth rate and female labor participation rate to half.
- 4) Case 4: In addition to Case 2, neutralizing the negative relation between birth rate and female labor participation rate completely.

Though Total Fertility Rate (TFR) in the simulation period, 1982-1996, was 1.61 on average, Case 1 raise TFR as much as 0.08 point in the same period, and Case 4 as much as 0.37 point and 1.98 on average. Also, those policies increase first marriage rate and encourage early marriage for young women.

We concluded that some appropriate policies could raise TFR. However, in order to deploy those policies, it must be necessary to improve gender relation of traditional structure in Japanese society.