# Time-inconsistency and the Delay of Childbirth<sup>1</sup>

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#### Abstract

I hypothesize that time inconsistent preferences cause the delay of childbearing, and empirically examine the hypothesis.

Using the Japanese micro-data from Osaka University's Preference Parameters Study, I use the Cox proportional hazard model of the conditional probability that individual gives birth to a child in a year. As results, women and men who have time inconsistent preferences face a lower hazard of giving birth to the first child than those who have time consistent preferences, especially, for wives born before 1959 and wives with a high school degree or less.

Further estimations of logit and probit models show that if men have time inconsistent preferences, their wives' probability of giving birth to the first child is greater than men who have time consistent preferences, while OLS estimations give no significant effect of time inconsistent preferences on the number of children ever born.

From the above, I conclude that one reason for the delay of childbearing is people have time inconsistent preferences.

### 1. Introduction

Declining total fertility rate is a widely recognized trend in many developed countries at least over the past few decades, decreasing on OECD country average from 2.67 in 1970 to 1.70 in 2011.<sup>3</sup> On low fertility the most important issue from the behavioral economic point of view is whether or not individuals have children as much as they intend to. In fact, D'Addio and d'Ercole (2005) suggest negatively that women generally have fewer children than they actually want and that the gap between desired and observed fertility rates is higher in countries where fertility rates are lower in OECD countries.

My idea for explaining why people have fewer children than they intended is time-inconsistent preference. If a young woman has discount rates which are higher over the short time horizon than over the long time horizon, she may decide now that she will have a baby by age 35, because late child-bearing entails higher risk for both mother and child. However, later when she comes closer to the age, she yields to procrastination and immerses herself in her career enhancement.

If I can make clear whether or not time inconsistent preference plays any role in fertility behavior, we will have clear justification for family policy. Those with time inconsistent

<sup>&</sup>lt;sup>3</sup> OECD (2012), OECD Family Database, OECD, Paris (www.oecd.org/social/family/database)

preference will feel regret looking back into their decisions to delay childbearing. This is because they fail to optimize their fertility behavior, and thus they bring losses on themselves. In contrast, if people can behave time consistently, then there will be no conflict between short term and long term, and thus the concept of the delay of childbearing will be redundant.

In this paper I hypothesize that time inconsistent preferences cause the delay of childbearing. Then, I empirically examine the hypothesis using the Japanese micro-data from wave 2011 of Osaka University's Preference Parameters Study.

#### 2. Data and Sample Selection

I use micro-data from the Preference Parameters Study of Osaka University's 21st Century COE Program, "Behavioral Macrodynamics Based on Surveys and Experiments," and its Global COE project, "Human Behavior and Socioeconomic Dynamics." Using two-stage stratified random sampling, the study began throughout Japan in February 2003 with 2000 males and females aged from 20 to 69 years and has been carried out every year since then. The drop–off, pick–up method is used in the study. Our survival analysis uses data from waves 2011 of the survey, which contains information on their 1<sup>st</sup> to 8<sup>th</sup> children's birth year and month. In wave 2011, the survey had 4,934 respondents out of 5,316 respondents of the prior wave 2010 (92.8% response rate).

I take the following steps in selecting our sample from the micro-data from the Preference Parameters Study. First, of 4,934 respondents, I select women providing information on their birth year and men who providing that on their spouse's birth year since I set the onset of childbearing occurred at women's age 15 years, arriving at a sample of 2,121 women and 1,576 men, which is used for nonparametric analysis. Then, I eliminate the individuals who did not provide the necessary information, which yields a sample of 1,300 women and 1,187 men for semi-parametric analysis.

#### 3. Nonparametric Analysis

In this section I conduct nonparametric analysis, where I make no assumption on the functional form of the hazard function.

I calculate the estimator of Kaplan-Meier of the survivor function, which is shown in Figures 1 and 2. In Figure 1 I plot two survivor curves of women to compare those who have time inconsistent preferences (n = 396) versus those who do not (n = 1,725). As expected, I see that childbearing of the first child seems to occur at a slower rate for women who have time inconsistent preferences than women who do not. The median survival times are 12 years (27 years old) for women who have time inconsistent preferences and 11 years (26 years old) for women who do not. The restricted means, defined as an integral from zero to infinity of the survivor function, are 12.37 years for women who have time inconsistent preferences and 11.80 years for women who do not. Unfortunately the respective 95% confidence intervals overlap, suggesting that there aren't significant differences in the means.

To formally test the equality of the survivor functions, I perform the log-rank test, which rejects the null hypothesis that the survivor functions of women who have time inconsistent preferences and women who do not are the same (p-value is 4.22%). The p-value from the Wilcoxon test is 0.63%.

In Figure 2, for men who have time inconsistent preferences (n = 367) and men who do not (n = 1,209) I plot the survivor curves of the childbearing of their spouses. The median survival times are 12 years (27 years old) for both men who have time inconsistent preferences and men who do not. The restricted means are 12.90 years for men who have time inconsistent preferences and 12.26 years for men who do not. There aren't significant differences in the means. Both the log-rank test and the Wilcoxon test reject the null hypothesis with the p-value of 1.16% and 1.01%, respectively.

#### 4. Estimation Method

To investigate the effects of time inconsistent preferences on childbearing, I will use the Cox proportional hazard model, where the covariates shift the baseline hazard functions multiplicatively. Here the hazard function, h(t), is the probability that individual *i* gives birth to a child in a year *t*, conditional upon she (or his wife) not giving a child to the beginning of the year. Then, the hazard function is modeled as,

$$h(t|\mathbf{x}_i) = h_0(t) \exp(\mathbf{x}_i \boldsymbol{\beta}_x) \tag{1}$$

where  $h_0$  is the baseline hazard given no particular parameterization and  $\boldsymbol{\beta}_x$  is the regression coefficients to be estimated.

Our main covariate is a binary variable *time-inconsistency*, which indicates whether or not respondents have time-inconsistent preferences. The study asked the respondents to answer questions that aimed to measure the respondents' discount rates. In one of the questions, the respondents were asked to hypothetically choose to receive X yen today (Option "A") or Y yen in seven days (Option "B") for each of nine choices. The amount X varies from 3,000 yen to 3,008 yen and the amount Y from 2,996 yen to 5,951.<sup>4</sup> In another question, they are asked to choose to receive X yen in 90 days from today or Y yen in 97 days from today in the same way. By

<sup>&</sup>lt;sup>4</sup> Approximately \$1=100 yen.

comparing these two questions, I can judge whether or not the respondents have time-inconsistent preferences, and construct a binary variable *time-inconsistency*<sub>i</sub>, which is equal to one if the discount rate is high in the near horizon, but low in the far horizon, and zero otherwise. I eliminate the respondents who wavered between Option "A" and Option "B".

Furthermore, people can have time preferences in the other direction, that is, the discount rate is low in the near horizon, but high in the far horizon. This is the situation where people are patient now but impatient in the future. For time preferences in this direction, I construct a binary variable *reverse time inconsistency*. The base category for these two variables is the respondents with conventional time consistent preferences.

 $\mathbf{x}_i$  includes covariates for controlling, wife's marriage age, wife's marriage age squared,

husband's and wife's highest level of education, husband's and wife's numbers of siblings, whether or not husband's and wife's mothers were working when husband and wife were 15 years old, wife's birth cohort in 10-year intervals, 10 regional blocks and the size of municipalities respondents live. I also include predicted husband's and wife's annual earned income before taxes but including bonuses (and business income) when they got married.

#### 5. Estimation Results

Table 1 reports that for women I have statistically significant hazard ratio for *time-inconsistency*, of .860. That is, women who have time inconsistent preferences face a hazard of giving birth to the first child 14% lower than women who have time consistent preferences. For men I also have statistically significant hazard ratio for *time-inconsistency*, of .885. That is, male respondents who have time inconsistent preferences face a hazard of wife's giving birth to the first child 11% lower than those who have time consistent preferences.

I conducted same estimations for the hazard of giving birth to from the second to the eighth children, setting the onset of childbearing at the time of the previous child's birth. However, I do not have any statistically significant hazard ratio for *time-inconsistency*.

### Estimations by Wife's Birth Year Cohort

I conduct estimations separately by wife's birth year (wives born before 1959 and after 1960). In Table 2 for wives born before 1959 I have statistically significant hazard ratios for *time-inconsistency* of .814 for women and .811 for men. That is, when wives born before 1959 women and men who have time inconsistent preferences face a hazard of their own or wives' giving birth to the first child 19% lower than those who have time consistent preferences. However, I do not have statistically significant hazard ratios for wives born after 1960.

#### Estimations by Wife's Education

Next I conduct estimations separately by wife's highest level of education (those with a high school degree or less and those with a college degree or more). In Table 3, for wives with a high school degree or less I have statistically significant hazard ratios for *time-inconsistency* of 0.837 for women. That is, women who have time inconsistent preferences face a hazard of giving birth to the first child 16% lower than those who have time consistent preferences. However, I do not have statistically significant hazard ratios for wives with a college degree or more.

6. Further Estimations for Late Childbearing and Number of Children Ever Born In this section I want to explore how time inconsistent preferences affect the probability of late childbearing and the number of children ever born. In the followings, assuming that women's childbearing age is age 49 and under, I use sample of women of fifty or older and men with wives of fifty or older.

First, I conduct estimations of the probability of late childbearing. Although the most

commonly definition of late childbearing is pregnancies of the first child over age 35, in Japan, before 1992 Japan Society of Obstetrics and Gynecology had indicated *elderly primiparae* by women who are pregnant for the first time thirty or older. Therefore, the dependent variable *late childbearing* equals 1 if a woman has their first child before she turns age thirty and otherwise equals 0.

I fit the models of logit and probit. I create a table of results (Table 4). In the table for men I have positive and significant coefficients of *time-inconsistency*, of .610 for logit estimation and of .386 for probit estimation, respectively. I compute the associated marginal effects at the mean as .0683 for logit and .0893 for probit, respectively. That is, if men have time inconsistent preferences, their wives' probability of giving birth to the first child 6.8 to 8.9 percent greater than men who have time consistent preferences, holding other variables at their mean. I also conducted the same estimations of late childbearing of age thirty five, but I do not have any significant coefficient of *time-inconsistency*.

Next, I conduct OLS estimations of the number of children ever born, but I do not have any significant coefficient of *time-inconsistency*.

#### 7. Conclusion

The results of the analysis with the Cox proportional hazard model support the hypothesis that one reason for the delay of childbearing is time inconsistent preferences. The ground of the argument is as follows.

For both women and men, those who have time inconsistent preferences face a lower hazard of their own or spouses' giving birth to the first child than those who have time consistent preferences (Table 1). Furthermore, I have different results depending on wife's birth year cohort and education: on the one hand, when wives born before 1959 if they or their husbands have time inconsistent preferences, they face a lower hazard of giving birth to the first child than those who have time consistent preferences (Table 2) on the other hand when wives have a high school degree or less, if they have time inconsistent preferences they face a lower hazard of giving birth to the first child than those who have time consistent preferences (Table 3). These suggest that there is a possibility that time inconsistent preferences is one factor in the delay of childbearing, especially when wives born before 1950s and have high school or less education.

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Figure 1: Kaplan-Meier estimates for hyperbolic discounters versus non-hyperbolic discounters (women, n = 2,121)



Figure 2: Kaplan-Meier estimates for hyperbolic discounters versus non-hyperbolic discounters

(men, n = 1,576)



Thes         Description         Description           Reverse time inconsistency         1.132         0.8637         0.8647           Nife's marriage age         0.4687         0.4539         0.4031           Wife's marriage age         0.4687         0.4532         0.4031           Wife's marriage age         0.4687         0.4532         0.4031           Wife's annual earned income (million yen)         0.3789         0.3683         0.4687           Wife's annual earned income (million yen)         0.4178         0.0887         0.4687           Wife's annual earned income (million yen)         0.4334         0.0887         0.4687           Wife's annual earned income (million yen)         0.4334         0.0887         0.4687           Wife's anual earned income (million yen)         0.4334         0.0887         0.4687           Callage         0.4096         0.4877         0.40850         0.4879           University         0.4096         0.4827         0.4929         0.4275           Wife's number of siblings         1.0338         1.0675         ****           Wife's number of siblings         0.4289         0.4289         ****           Wife's number of siblings         0.4269         0.4275         **** <th></th> <th>Haz.</th> <th>Ratio</th> <th>(Std. Err.)</th> <th></th>		Haz.	Ratio	(Std. Err.)	
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New Yes Like inconsistency         1.142         0.9417           Nife's marriage age         0.6487         0.6487           Nife's marriage age?2         1.0011         1.0104           Husband's annual earned income (million yen)         0.0113         0.0113           Nife's annual earned income (million yen)         0.0113         0.0113           Nife's annual earned income (million yen)         0.0123         0.0233           Nife's education: Junior high school         1.2344         0.0556           College         1.01771         0.0655           University         0.61269         0.1340           Graduate         1.6473         1.0252           Husband's number of siblings         1.0234         1.0271           Graduate         1.6473         1.0252           Wife's number of siblings         1.0234         1.0271           Husband's number of siblings         1.0222         1.0021           Wife's nother was working when W was 15 years old         0.05850         0.0143           Wife's hirt_year cohort 30's         1.0244         0.8775           Wo you want to have a child in the future?"         1.0343         0.02575           Wife's hirt_year cohort 30's         1.02444         0.8776 <td< td=""><td></td><td>(0.0635)</td><td></td><td>(0.0642)</td><td></td></td<>		(0.0635)		(0.0642)	
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Wife's annual earned income (million yen)         1.0115         0.0232)         0.0232)           Wife's education: Junior high school         1.2364         1.0996           College         1.0096         0.6677           University         0.8806         0.9428           Graduate         1.0096         0.6677           University         0.8806         0.9428           Graduate         1.0473         1.0292           Husband's number of siblings         1.0202         1.0021           Wife's number of siblings         0.0239         0.0277)           Wife's number of siblings         1.0202         1.0021           W's mother was working when W was 15 years old         0.0555         1.2507           "Do you want to have a child in the future?"         1.0314         0.67715           Wife's_birth_year cohort 30's         0.05521         0.0239           60's         0.05521         0.0326           60's         0.0330         0.02326           70's         1.0710         0.9951           60's         0.0330         0.02326           70's         1.0710         0.9951           60's         0.0330         0.02326           70's         1.0720		(0, 0178)		(0.0187)	
Hinds Callenge         (0.022)         (0.023)           Wife's education: Junior high school         (0.1354)         (1.936)           Callege         (0.0727)         (0.6655)           University         (0.0727)         (0.6655)           Graduate         (0.0727)         (0.6655)           Husband's number of siblings         (0.0731)         (0.222)           Husband's number of siblings         (0.03153)         (0.4728)           Wife's number of siblings         (0.0269)         (0.0275)           H's mother was working when H was 15 years old         (0.0557)         (0.0265)           W's mother was working when W was 15 years old         (0.0557)         (0.0265)           W's mother was working when W was 15 years old         (0.0557)         (0.0275)           Wife's_birth_year cohort 30's         (1.0474)         (0.776)           W's         (0.0270)         (0.2302)         (0.2302)           W's         (0.0353)         (0.2302)         (0.2302)           W's         (0.044)         (0.0557)         (0.0275)           Wife's_birth_year cohort 30's         (0.2707)         (0.2302)         (0.2302)           W's         (0.044)         (0.06852)         (0.3228)           60's <td< td=""><td>Wife's annual earned income (million ven)</td><td>1 0115</td><td></td><td>0 9832</td><td></td></td<>	Wife's annual earned income (million ven)	1 0115		0 9832	
Wife's education: Junior high school         1.2364         1.0956           Callege         1.0096         0.6677           University         0.8506         *           Graduate         1.0473         1.0222           Graduate         1.0338         1.0675           University         0.8506         *           Graduate         1.0473         1.0222           Husband's number of siblings         1.0338         1.0675           Wife's number of siblings         0.02890         0.01733           0.02890         0.02755         ****           W's mother was working when W was 15 years old         0.03555         1.2507         ****           W's mother was working when W was 15 years old         0.03555         1.2507         ****           Wife's_birth_year cohort 30's         1.0309         0.2309         0.2309           40's         0.9352         0.8539         ****           60's         0.8539         ****         0.8939           60's         0.08030         ****         0.8939           60's         0.08030         ****         0.8939           60's         0.08030         *****         0.8939           0's         0.0809 <td>write b annuar carnea rheome (mirring yen)</td> <td>(0 0232)</td> <td></td> <td>(0.0231)</td> <td></td>	write b annuar carnea rheome (mirring yen)	(0 0232)		(0.0231)	
Interview         (0.1449)         (0.1348)           College         1.006         0.8677           University         0.8506         •           Graduate         1.0473         1.0222           Graduate         1.0473         1.0222           Husband's number of siblings         1.0338         1.0675           Wife's number of siblings         1.0338         1.0675           Wife's number of siblings         1.0326         1.0021           H's mother was working when H was 15 years old         0.05560         0.0141           Wife's number of siblings         1.0335         1.2507         ***           Wife's muther was working when W was 15 years old         0.05571         0.0577         (0.0577)           Wife's birth_year cohort 30's         1.0474         0.8776         (0.0571)           Wife's birth_year cohort 30's         1.0474         0.8726           40's         0.9752         0.8997         (0.0266)           60's         0.0530         (0.02361)         (0.02362)           70's         1.06710         0.9691         (0.0266)           80's         2.2192         1.5392         ***           1ess than 100,000 pop         1.1623         1.0237	Wife's education: Junior high school	1 2364		1 0956	
College         1.0065         0.8575         *           University         0.8576         0.9428           Graduate         1.0473         1.0292           Graduate         1.0473         1.0292           Husband's number of siblings         1.0338         1.0675           Wife's number of siblings         1.022         1.021           H's mother was working when H was 15 years old         0.5560         0.9173           W's mother was working when W was 15 years old         0.03861         0.01614)           W's mother was working when W was 15 years old         0.03560         0.9173           Wife's burth year cohort 30's         1.0474         0.8776           Wife's birth year cohort 30's         0.2224)         0.01555           Wife's birth year cohort 30's         0.03838         ***           60's         0.9358         0.8289           60's         0.03261         ****           70's         0.06521         0.07241           80's         2.2192         ****           0.03280         0.9324         ****           70's         0.03260         0.32281           70's         1.03660         0.03261         *****           100,000 pop	Milo o calcadion, cantor high concor	(0.1649)		(0.1348)	
University         (0.7727)         (0.0655)           University         (0.8366)         • (0.4973)           Graduate         (0.0782)         (0.4973)           Husband's number of siblings         (0.2153)         (0.4729)           Husband's number of siblings         (0.220)         (0.021)           Wife's number of siblings         (0.0289)         (0.0275)           Wife's number of siblings         (0.0289)         (0.0275)           Wife's mother was working when W was 15 years old         (0.0586)         (0.0614)           W's mother was working when W was 15 years old         (0.0587)         (0.0887)           Wife's_birth_year cohort 30's         (1.0174)         (0.1595)           Wife's_birth_year cohort 30's         (0.2309)         (0.2302)           40's         (0.2303)         (0.2302)           60's         (0.6552)         (0.0774)           70's         (0.0774)         (0.8865)           80's         (0.07774)         (0.8861)           60's         (0.0277)         (0.0865)           80's         (0.07774)         (0.8861)           60's         (0.0777)         (0.0865)           80's         (0.0777)         (0.0865)           10's	College	1 0096		0 8677	*
University (0.8506 * 0.8423 Graduate 1.0473 1.0292 Husband's number of siblings 1.0338 1.0675 **** (0.2240) (0.0225) Husband's number of siblings 1.0202 1.0021 Wife's number of siblings 1.0202 1.0021 Wife's number of siblings 1.0202 1.0021 H's mother was working when H was 15 years old 0.9580 0.9173 W's mother was working when W was 15 years old 1.0355 1.2507 "Do you want to have a child in the future?" 1.0367 0.00871 "Do you want to have a child in the future?" 1.0224 0.01595 Wife's_birth_year cohort 30's 0.2309 0.23027 40's 0.9752 0.8997 40's 0.9752 0.8997 50's 0.8538 *** 0.8523 70's 0.0553 0.0552 0.03261 s0's 0.0552 0.03261 The size of municipalities: ordinance-designated city 1.0366 0.03266 town and village 0.16680 **** 1.0237 town and village 0.16680 **** 1.0237 Koshinetsu 1.1311 *** 0.8819 town and village 0.16680 **** (0.1340) 0.00865) town and village 0.16681 **** Koshinetsu 1.1311 *** 0.8619 Tokai 0.03561 **** Koshinetsu 1.3311 *** 0.8619 Tokai 0.013651 **** Chugoku 0.13261 **** Chugoku 0.1269 **** Chugoku 1.5551 **** 1.0237 Koshinetsu 1.3311 *** 0.8619 Tokai 0.1297 **** 1.0237 Koshinetsu 1.3311 *** 0.8619 Tokai 0.1299 (0.1274) Kinki 1.3563 * 0.1316 **** Chugoku 1.5651 **** 1.0256 **** Chugoku 1.5651 **** 1.0257 Koshinetsu 1.3311 *** 0.8619 Chugoku 1.5651 **** 1.0256 **** Chugoku 1		(0 0727)		(0.0655)	
Graduate         (0.0787)         (0.0871)           Graduate         (0.473)         (0.028)           Husband's number of siblings         (0.333)         (0.4729)           Wife's number of siblings         (0.0240)         (0.0265)           Wife's number of siblings         (0.028)         (0.0275)           Wife's mother was working when H was 15 years old         (0.5880)         (0.9173)           W's mother was working when W was 15 years old         (0.0657)         (0.0657)           "bo you want to have a child in the future?"         (1.3148)         (0.1997)           Wife's birth_year cohort 30's         (0.474)         (0.8776)           Wife's birth_year cohort 30's         (0.652)         (0.8977)           40's         (0.778)         (0.2309)         (0.2304)           60's         (0.652)         (0.8977)           60's         (0.652)         (0.8977)           60's         (0.652)         (0.8971)           80's         (0.7797)         (0.0236)           80's         (0.7979)         (0.0626)           10930         (0.07797)         (0.6863)           10931         (0.2305)         (0.3365)           10931         (0.2349)         (0.1151) <t< td=""><td>University</td><td>0.8506</td><td>*</td><td>0.9428</td><td></td></t<>	University	0.8506	*	0.9428	
Graduate         1.0472         1.05292           Husband's number of siblings         1.03153)         (0.4729)           Wife's number of siblings         1.0220         1.0021           Wife's number of siblings         1.0220         1.0021           Wife's number of siblings         1.0220         1.0021           Wife's mother was working when H was 15 years old         0.9580         0.9173           (0.0586)         (0.0657)         (0.0657)         0.0687)           W's mother was working when W was 15 years old         1.0355         1.2507         ***           (0.0576)         (0.0657)         (0.0657)         (0.0657)         (0.0657)           Wise's_birth_year cohort 30's         1.0474         0.8776         (0.2309)         (0.2302)           40's         0.9752         0.8997         (0.0526)         (0.0724)           70's         (0.0652)         (0.0724)         (0.0652)         (0.0724)           70's         (0.0652)         (0.0724)         (0.0665)         (0.226)           80's         (2.2192)         ****         (0.0655)         (0.2261)           1.0970         (0.0655)         (0.2261)         ****           1.0970         (0.0655)         (0.1274)	***************************************	(0.0782)		(0.0971)	
Husband's number of siblings         (0.3133)         (0.4729)           Husband's number of siblings         (0.024)         (0.026)           Wife's number of siblings         (0.028)         (0.0275)           H's mother was working when H was 15 years old         (0.586)         (0.021)           W's mother was working when W was 15 years old         (0.0586)         (0.057)           "Do you want to have a child in the future?"         (1.3148)         (0.977)           "Do you want to have a child in the future?"         (1.3148)         (0.977)           "Do you want to have a child in the future?"         (1.3148)         (0.971)           Wife's_birth_year cohort 30's         (0.474)         (0.8776)           (0.2224)         (0.1595)         (0.2302)           40's         (0.9752)         (0.8997)           60's         (0.6538)         (0.0223)           70's         (0.0652)         (0.2302)           80's         22192         ***           100,000 pop         (1.623)         **           100,000 pop         (1.623)         **           100,000 pop         (1.623)         **           100,000 pop         (0.1249)         (0.1151)           Koshinetsu         (0.3261)         (0.1	Graduate	1.0473		1.0292	
Husband's number of siblings         1.0332         1.0675         ***           Wife's number of siblings         1.00240)         (0.0283)         (0.0283)           H's mother was working when H was 15 years old         0.05860         (0.0614)           W's mother was working when W was 15 years old         0.0355         1.2507           W's mother was working when W was 15 years old         1.0355         1.2507           "Do you want to have a child in the future?"         1.3148         0.9715           Wife's_birth_year cohort 30's         1.0474         0.8776           40's         0.9752         0.8997           60's         0.8538         **         0.8923           60's         0.6552         0.0724)           70's         1.0710         0.9951           80's         2.2192         ***           1.0320         0.08651         0.0322           1.0321         1.0677         1.0322           80's         2.2192         ***         1.3392           1.0010         1.0321         1.0625         1.0322           1.0120         0.9851         0.08651         1.0226           1.0131         0.9854         0.08551         1.0122           1.0121<		(0.3153)		(0.4729)	
Wife's number of siblings         (1.0202         (1.0021)           Wife's number of siblings         (1.0202)         (1.0021)           Wis mother was working when H was 15 years old         (0.0239)         (0.0275)           W's mother was working when W was 15 years old         (1.0355)         (1.2507)           "Do you want to have a child in the future?"         (1.0355)         (1.2607)           "Do you want to have a child in the future?"         (1.0474)         (0.8573)           Wife's_birth_year cohort 30's         (1.0474)         (0.8989)           40's         (0.2302)         (0.2302)           40's         (0.652)         (0.0724)           60's         (0.8938)         (0.0889)           60's         (0.9300)         (0.0226)           70's         (1.0710)         (0.9951)           80's         (1.2232)         ***           1ess than 100,000 pop         (1.1623)         (1.227)           1ess than 100,000 pop         (1.1231)         (0.228)           town and village         (1.1313)         (0.9954)           1okuriku         (1.3265)         (1.227)           Koshinetsu         (1.3140)         (0.1151)           The size of municipalities: ordinance-designated city         (	Husband's number of siblings	1.0338		1.0675	* * *
Wife's number of siblings         1.0202         1.0021           H's mother was working when H was 15 years old         0.9380         0.9173           W's mother was working when W was 15 years old         1.0355         1.2507           W's mother was working when W was 15 years old         1.0355         1.2507           "Do you want to have a child in the future?"         1.3148         0.9715           Wife's_birth_year cohort 30's         1.0274         0.15957           Wife's_birth_year cohort 30's         0.2474         0.8776           60's         0.9752         0.98931           60's         0.08538         ***           70's         1.0710         0.9951           80's         2.2392         ****           70's         1.6820         0.8061           80's         2.2392         ****           1.0227         0.9951         0.9954           1.023         1.0237         0.0626           1.023         ***         1.0237           The size of municipalities: ordinance-designated city         1.0820         0.8061           1.023         ***         1.0237           Koshinetsu         1.3311         0.9954           1.024         0.16573         <		(0.0240)		(0.0265)	
H's mother was working when H was 15 years old         (0.9580)         (0.9173)           W's mother was working when W was 15 years old         (0.0586)         (0.0614)           W's mother was working when W was 15 years old         (0.0657)         (0.0857)           "Do you want to have a child in the future?"         (1.3148)         (0.9173)           Wife's_birth_year cohort 30's         (0.224)         (0.1535)           Wife's_birth_year cohort 30's         (0.0457)         (0.0887)           40's         (0.9722)         (0.8997)           60's         (0.0358)         (0.0322)           70's         (0.0352)         (0.0322)           70's         (0.0390)         (0.0226)           80's         (2.2192)         (0.3228)           The size of municipalities: ordinance-designated city         (0.0277)         (0.0662)           1.0820         (0.0800)         (0.0805)         (0.1151)           Regional block: Hokkaido         (0.8562)         (1.210)           Tohoku         (1.176)         (1.2868)         ***           (0.1125)         (0.1125)         (0.1111)         (1.2276)           Koshinetsu         (1.3311)         ***         (0.1117)           Less than 100,000 pp         (1.176)	Wife's number of siblings	1.0202		1.0021	
H's mother was working when H was 15 years old (0.9860) (0.9614) W's mother was working when W was 15 years old (0.0867) (0.9867) "Do you want to have a child in the future?" (1.3148 (0.9715) "Do you want to have a child in the future?" (1.3148 (0.9715) Wife's_birth_year cohort 30's (0.2224) (0.1595) Wife's_birth_year cohort 30's (0.2309) (0.2302) 40's (0.9752) (0.9897) 60's (0.9653) *** (0.9893) 60's (0.9653) *** (0.9893) 60's (0.9653) *** (0.9893) 70's (0.6653) *** (0.9925) 80's (2.2162) **** (0.9925) 80's (2.2162) **** (0.9925) 10's (0.9771) (0.9925) 80's (2.2162) **** (0.9925) 10's (0.9797) (0.9661) **** (0.0797) (0.9665) **** 10's (0.9926) **** (0.9661) **** (0.9797) (0.9665) **** 10's (0.9926) **** (0.9665) town and village (1.1813) (0.9954) town and village (1.1813) (0.9954) Tohoku (1.1176) (1.2276) **** (0.1863) *** (0.1151) Regional block: Hokkaido (0.1862) **** (0.1863) **** (0.1151) Regional block: Hokkaido (0.1862) **** (0.1863) **** (0.1151) Tokai (1.1176) (1.2276) *** Kinki (0.1249) (0.11617) Kinki (0.2335) **** (1.2276) *** Kinki (0.1219) **** (1.116) Chugoku (1.5561) **** (1.2560) *** Kinki (0.23652) **** (1.2170) Chugoku (1.5561) **** (1.2560) *** Kinki (0.21729) **** (1.2189) Number of obs (1.1176) LR chi2(32) 905,91 (5.8.64 Prob > ch		(0.0289)		(0.0275)	
W's mother was working when W was 15 years old         (0.0586)         (0.0614)           W's mother was working when W was 15 years old         (0.0657)         (0.0857)           "Do you want to have a child in the future?"         (1.2224)         (0.1595)           Wife's_birth_year cohort 30's         (1.0414)         (0.1595)           Wife's_birth_year cohort 30's         (0.2309)         (0.2302)           40's         (0.9752)         (0.8937)           60's         (0.8588)         **           60's         (0.8588)         (0.0922)           70's         (0.0930)         (0.0226)           80's         (2.3162)         (0.3228)           The size of municipalities: ordinance-designated city         (0.0920)         (0.861)           10200         0.8061         ****           10212         ***         (0.0226)           10201         0.08001         (0.0226)           10220         0.8061         ****           10231         1.0237         (0.0625)           10231         1.0237         (0.0800)           102324         (0.1511)         (0.1681)           10231         0.9954         (0.1677)           10241         (0.1683)         (0.117	H's mother was working when H was 15 years old	0.9580		0.9173	
W's mother was working when W was 15 years old       1.035;       1.2507       ****         "Do you want to have a child in the future?"       1.3148       0.9715         "Do you want to have a child in the future?"       1.3148       0.9715         Wife's_birth_year cohort 30's       1.0474       0.8776         Wife's_birth_year cohort 30's       1.0474       0.8776         40's       0.9752       0.89397         60's       0.8538       **         60's       0.8538       *         70's       1.0710       0.9951         80's       (0.0326)       (0.0226)         80's       2.2192       ***         1.0520       0.8661       ***         0.06621       1.0237       (0.0626)         1.053       1.0237       (0.0626)         1.0813       0.9954       (0.1511)         1.0820       0.8800       (0.1627)         1.0813       0.9954       (0.1511)         1.0821       1.1176       1.2868       *         1.0821       0.11813       0.9954       ***         1.0814       0.12491       (0.11677)       ****         1.0821       1.0170       (0.1274)       ****     <	5 1	(0.0586)		(0.0614)	
"Do you want to have a child in the future?"         (0.0657)         (0.0857)           ""Do you want to have a child in the future?"         (0.2224)         (0.1595)           Wife's_birth_year cohort 30's         1.0474         0.8776           "Wife's_birth_year cohort 30's         (0.2309)         (0.2302)           40's         0.9752         0.8997           60's         (0.0652)         (0.0724)           70's         (0.0653)         (0.9951)           80's         2.2192         ***           80's         (0.3665)         (0.3806)           100's         (0.0777)         (0.0626)           11623         **         1.0237           100,000 pop         1.1623         **           1.1813         0.9954           (0.01340)         (0.1151)           Kegional block: Hokkaido         0.8652         1.1210           (0.1492)         (0.1677)         (0.1677)           Koshinetsu         1.3311         **         0.8619           (0.1274)         1.2868         *         ****           1.311         1.2863         *         0.5355           Koshinetsu         1.3311         ***         0.8619           (	W's mother was working when W was 15 years old	1.0355		1.2507	* * *
"Do you want to have a child in the future?" (0.2224) Wife's_birth_year cohort 30's 1.0474 0.2309) 40's 60's 0.952 0.8897 60's 0.0538 1.0710 0.9261 60's 0.6523 1.0710 0.9261 1.0710 0.9951 0.02261 80's 2.2192 *** (0.0226) 80's 2.2192 *** 1.0327 (0.0226) 80's 1.020 0.8061 *** (0.0277) 0.06260 1.1623 ** 1.0327 (0.0880) (0.0805) 1.0623 *** 1.0327 (0.0805) 1.1623 ** 1.0327 (0.0805) 1.1623 ** 1.0217 (0.1249) 0.1151) Regional block: Hokkaido 0.6652 1.1210 (0.1249) (0.1151) Regional block: Hokkaido 0.1340) (0.1249) (0.1274) ** (0.1492) (0.1151) 1.2266 ** (0.1274) ** (0.1223) (0.1111) * 1.2276 *** (0.1052) (0.1111) * * (0.1052) (0.1111) * * * * (0.1052) (0.1117) * * * * (0.1052) * * * * (0.1052) * * * * (0.1129) * * * (0.1129) * * * (0.1129) * * * * * (0.1223) (0.1110 * * * * * * * * (0.1052) * * * * * * * * * * * * *		(0.0657)		(0.0857)	
Wife's_birth_year cohort 30's         (0.224)         (0.1595)           Wife's_birth_year cohort 30's         1.0474         0.8776           40's         0.2309)         (0.2302)           40's         0.9752         0.8997           60's         0.8538         **         0.8923           60's         0.6521         (0.0724)           70's         1.0710         0.9951           80's         2.2192         ***         1.5392           80's         2.2192         ***         1.5392           1bes than 100,000 pop         1.1623         **         1.0237           1bes than 100,000 pop         1.1623         **         1.0237 <td>"Do you want to have a child in the future?"</td> <td>1.3148</td> <td></td> <td>0.9715</td> <td></td>	"Do you want to have a child in the future?"	1.3148		0.9715	
Wife's_birth_year cohort 30's       1.0474       (0.8776)         40's       (0.2302)       (0.2302)         40's       (0.944)       (0.0889)         60's       (0.652)       (0.724)         70's       (0.0930)       (0.9951)         80's       (0.3328)       (0.3228)         80's       (0.3665)       (0.3228)         100,000 pop       (0.652)       (0.626)         11112       (0.0652)       (0.6626)         1100,000 pop       (0.3665)       (0.3228)         11112       (0.0626)       (0.6626)         11113       (0.9954)       (0.6626)         11111       (0.1627)       (0.6626)         11111       (0.1429)       (0.1151)         11116       (0.1492)       (0.1151)         11116       (0.1492)       (0.1677)         11116       (0.1224)       (0.11274)         11116       (0.1224)       (0.11274)         11114       (0.1661)       (0.1274)         11116       (0.1274)       (0.1677)         11111       (0.1677)       (0.11274)         11116       (0.1274)       (0.11274)         11111       (0.1661)       (0.11	-	(0.2224)		(0.1595)	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Wife's birth year cohort 30's	1.0474		0.8776	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		(0.2309)		(0.2302)	
60's         (0.094)         (0.0889)           70's         (0.0652)         (0.0724)           70's         1.0710         0.9951           80's         (2.2192)         ***         1.5392           The size of municipalities: ordinance-designated city         (0.0655)         (0.3228)           The size of municipalities: ordinance-designated city         1.0920         0.8061         ***           (0.0880)         (0.0805)         (0.0805)         (0.1151)           town and village         1.1813         0.9954         (0.1340)         (0.1861)           Tohoku         1.1176         1.2868         *           Mohinetsu         (0.1249)         (0.1677)         (0.1861)           Tohoku         1.1176         1.2868         *           Mokuriku         (0.2335)         (0.1111)         *           Koshinetsu         1.3311         **         0.8619         ***           Mokuriku         1.2972         ***         1.2885         ****           (0.1062)         (0.1111)         **         ***         ***           Mokuriku         1.2972         ***         1.2885         ****           (0.1062)         (0.1187)         *** <td>40's</td> <td>0.9752</td> <td></td> <td>0.8997</td> <td></td>	40's	0.9752		0.8997	
60's         0.8538         **         0.8923           70's         1.0710         0.9951           80's         2.2192         ***           1.0920         0.8061         ***           0.0655         (0.3228)         ***           The size of municipalities: ordinance-designated city         1.0920         0.8061         ***           1.0920         0.8061         ***         1.0237           1.083         1.023         **         1.0237           1.0800         (0.0800)         (0.0805)         ***           1.0813         0.9954         (0.1151)         ***           1.0813         0.9954         (0.1151)         ***           1.0813         0.9954         (0.1151)         ***           1.0813         0.9954         (0.1249)         (0.1151)           1.081         1.176         1.2868         *           1.0920         (0.1677)         ***         0.8619           1.0920         (0.1677)         ****         0.8619           1.0920         (0.1170)         ****         0.8619           1.0920         (0.1187)         1.2276         ****           1.0942         (0.1187)		(0.0944)		(0.0889)	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	60′s	0.8538	* *	0.8923	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		(0.0652)		(0.0724)	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	70's	1.0710		0.9951	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		(0.0930)		(0.0926)	
The size of municipalities: ordinance-designated city       (0.3665)       (0.3228)         The size of municipalities: ordinance-designated city       (0.0797)       (0.0626)         less than 100,000 pop       1.1623       ***       1.0237         less than 100,000 pop       (0.0880)       (0.0805)         town and village       (1.1813       0.9954         town and village       (0.1249)       (0.1151)         Regional block: Hokkaido       0.8652       1.1210         Tohoku       (1.176       1.2868       *         Tohoku       1.1176       1.2868       *         Koshinetsu       1.3311       **       0.8019       ***         Hokuriku       1.3683       *       0.5365       ***         Tokai       1.1271       1.2276       **         Kinki       1.2972       ****       1.2895       ****         Chugoku       1.5651       ****       1.2895       ****         Chugoku       1.5651       ****       1.2895       ****         Kinki       1.2972       ****       1.2895       ****         Go.1020       (0.1129)       (0.1170)       *       ***         Kinki       1.2976       <	80's	2.2192	* * *	1.5392	* *
The Size of Municipalities: ordinance-designated city         1.0920         0.8061         ****           less than 100,000 pop         1.1623         **         1.0237           town and village         (0.0880)         (0.0805)           town and village         (0.1249)         (0.1151)           Regional block: Hokkaido         0.8652         1.1210           Tohoku         1.1176         1.2868         *           Koshinetsu         (0.1340)         (0.1677)           Koshinetsu         1.3683         0.5365         ****           Mokuriku         1.3683         0.5365         ****           Koshinetsu         (0.1274)         ***         ****           Koshinetsu         1.3683         0.5365         ****           Kokai         1.1571         1.2276         ***           Tokai         1.1571         1.2285         ****           Kinki         1.2972         ****         1.2895         ****           Chugoku         1.5651         ****         1.2895         ****           Kinki         1.2972         ***         1.0942         ***           Kinki         1.2976         ***         1.2895         **** <tr< td=""><td></td><td>(0.3665)</td><td></td><td>(0.3228)</td><td></td></tr<>		(0.3665)		(0.3228)	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	The size of municipalities: ordinance-designated city	1.0920		0.8061	* * *
1:1023       1:1023         town and village       1:1023         town and village       1:1813         0:0880)       (0.1801)         Regional block: Hokkaido       0.8652         Tohoku       1:1176         Tohoku       1:1176         Koshinetsu       1:3311         **       0.8652         Koshinetsu       1:3311         **       0.8663         (0.1226)       (0.1274)         Hokuriku       1.3683       0.5365         ***       (0.1062)       (0.1111)         Tokai       1:1571       1:2276         Kinki       1:2972       ***         (0.1129)       (0.1170)         Chugoku       1:5651       ***         (0.2238)       (0.1170)         Chugoku       1:5651       ***         (0.2242)       (0.1693)         Shikoku       1:0942         Kyushu       0.8652       1:1116         (0.2340)       (0.1129)         Kumber of obs       1:300       1187         I.R chi2(32)       905.91       658.64         Prob > chi2       0.0000       -6900.1984	less than 100,000 man	(0.0/97)	ىلد بلد	(0.0626)	
town and village         (0.0880)         (0.0880)           town and village         1.1813         0.9954           (0.1249)         (0.1151)           Regional block: Hokkaido         0.8652         1.1210           Tohoku         1.1176         1.2868         *           (0.1492)         (0.1677)         1.3311         **         0.8619           Koshinetsu         1.3311         **         0.8619           Hokuriku         1.3683         *         0.5365         ***           Tokai         (0.1026)         (0.1111)         ***           Tokai         1.1571         1.2276         **           Kinki         1.2972         ***         1.2895         ****           (0.1062)         (0.1187)         ****         ****           Chugoku         1.5651         ****         1.2560         *           Shikoku         1.5960         ****         1.0942         ****           (0.2289)         (0.1822)         \$         \$         \$           Kyushu         0.8652         1.1116         \$         \$           Kyushu         0.8652         1.1116         \$         \$           LR chi2(32)<	iess chan 100,000 pop	1.1023	~ ~	1.0237	
Lown and Village         1.1813         0.9934           Regional block: Hokkaido         0.8652         1.1210           Tohoku         (0.1340)         (0.1861)           Tohoku         1.1176         1.2868           Koshinetsu         1.3311         **         0.8619           Hokuriku         1.3683         *         0.5365           Tokai         1.1571         1.2276         **           Kinki         1.2972         ***         1.2895           Kinki         1.2972         ***         1.2895           Chugoku         1.5651         ***         1.2560           Shikoku         0.8652         1.1116           Kyushu         0.8652         1.1117           Kinki         1.2972         ***         1.2895           Kinki         1.2972         1.2895         ***           (0.1170)         1.5651         ****         1.2560	term and willage	(0.0880)		(0.0805)	
Regional block: Hokkaido         (0.1249)         (0.1191)           Regional block: Hokkaido         0.8652         1.1210           Tohoku         1.1176         1.2868           Tohoku         1.1176         1.2868           Koshinetsu         1.3311         **           Hokuriku         1.3683         0.5365           Tokai         1.1571         1.2276           Kinki         1.2972         ***           Kinki         1.2972         ***           Kinki         1.5651         ***           Chugoku         1.5651         ***           Kyushu         0.8652         1.1110           Kinki         1.2970         ****           (0.1129)         (0.1170)         (0.1187)           Kinki         1.5960         ***           (0.2042)         (0.1693)         (0.1693)           Shikoku         1.5960         ***           Kyushu         0.8652         1.1116           Kumber of obs         1300         1187           LR chi2(32)         905.91         658.64           Prob > chi2         0.0000         -6990.1984	cown and village	1.1013		0.9954	
Negronal Drock, nokkado       0.802       1.1210         Tohoku       (0.1340)       (0.1861)         Tohoku       1.1176       1.2868       *         (0.1492)       (0.1677)       (0.1274)         Koshinetsu       1.3311       **       0.8619         Hokuriku       1.3683       *       0.5365       ***         Hokuriku       1.3683       *       0.5365       ***         Tokai       1.1571       1.2276       **         Kinki       1.2972       ***       1.2895       ***         Chugoku       1.5651       ***       1.2895       ***         Kinki       1.2972       ***       1.2895       ***         Chugoku       1.5651       ***       1.0942       ***         Kyushu       0.8652       1.1116       ***       1.0942         Kyushu       0.8652       1.1116       ***       1.0942         Kyushu       0.8652       1.1116       ***       1.0942         LR chi2(32)       905.91       658.64       ***         Prob > chi2       0.0000       0.0000       -6990.1984	Perional block. Hokkaido	(0.1249)		(0.1131)	
Tohoku       1.1176       1.2868       *         Koshinetsu       1.3311       **       0.8619         Mokuriku       1.3683       *       0.5365         Hokuriku       1.3683       *       0.5365         Tokai       1.1571       1.2276       **         Moku       1.2972       ***       1.2895         Kinki       1.2972       ***       1.2895         Kinki       1.2972       ***       1.2895         Chugoku       1.5651       ****       1.0942         Kyushu       0.8652       1.1116         Kyushu       0.8652       1.1176         LR chi2 (32)       905.91       658.64         Prob > chi2       0.0000       0.0000         Log likelihood       -7670.7728       -6990.1984	Regional Diock. Nokkaldo	(0.1340)		(0 1961)	
Initial1.11101.2000Koshinetsu $(0.1492)$ $(0.1677)$ Hokuriku $(0.1926)$ $(0.1274)$ Hokuriku $(0.2335)$ $(0.1111)$ Tokai $(1.571)$ $1.2276$ Kinki $(0.1062)$ $(0.1187)$ Kinki $1.2972$ ***Chugoku $1.5651$ ***Chugoku $1.5651$ ***Shikoku $(0.2042)$ $(0.1693)$ Shikoku $1.5960$ ***Kyushu $0.8652$ $1.1116$ LR chi2 (32) $905.91$ $658.64$ Prob > chi2 $0.0000$ $0.0000$ Log likelihood $-7670.7728$ $-6990.1984$	Toboku	1 1176		1 2868	*
Koshinetsu       1.3311       **       (0.1927)         Hokuriku       1.3683       *       0.5365       ****         (0.2335)       (0.1111)       (0.1111)       ****       1.2276       ***         Tokai       1.1571       1.2276       ***       ****         (0.1062)       (0.1187)       ****       ****       ****         Kinki       1.2972       ****       1.2895       ****         (0.1129)       (0.1170)       ***       1.2560       *         Kinki       1.5651       ****       1.2560       *         (0.2042)       (0.1693)       ***       ****       ****         Shikoku       1.5960       ****       1.0942       ****         (0.2589)       (0.1822)       ****       ****       ****         Kyushu       0.8652       1.1116       ***       ****         (0.1340)       (0.1195)       ****       ****       ****         Number of obs       1300       1187       ***       ****         LR chi2(32)       905.91       658.64       ****       ****         Prob > chi2       0.0000       0.0000       -6990.1984       ****** </td <td>Tonoka</td> <td>(0 1/92)</td> <td></td> <td>(0 1677)</td> <td></td>	Tonoka	(0 1/92)		(0 1677)	
Hobining Guide       1.351       0.0019         Hokuriku       1.3683       *       0.5365       ***         Image: Constraint of the second seco	Koshinetsu	1 3311	* *	0 8619	
Hokuriku       1.3683       *       0.5365       ***         (0.2335)       (0.1111)         Tokai       1.1571       1.2276       **         (0.1062)       (0.1187)       ***       ***         Kinki       1.2972       ***       1.2895       ***         (0.1129)       (0.1170)       ***       1.2560       *         Chugoku       1.5651       ***       1.2560       *         (0.2042)       (0.1693)       ***       1.0942         Shikoku       1.5960       ***       1.0942         Kyushu       0.8652       1.1116         (0.1340)       (0.1195)       1187         LR chi2(32)       905.91       658.64         Prob > chi2       0.0000       0.0000         Log likelihood       -7670.7728       -6990.1984	Robhindebu	(0 1926)		(0, 1274)	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Hokuriku	1.3683	*	0.5365	* * *
Tokai       1.1571       1.2276       **         (0.1062)       (0.1187)         Kinki       1.2972       ***         (0.1129)       (0.1170)         Chugoku       1.5651       ***         (0.2042)       (0.1693)         Shikoku       1.5960       ***         (0.2589)       (0.1822)         Kyushu       0.8652       1.1116         (0.1340)       (0.1195)         Number of obs       1300       1187         LR chi2(32)       905.91       658.64         Prob > chi2       0.0000       0.0000         Log likelihood       -7670.7728       -6990.1984		(0.2335)		(0.1111)	
Kinki       (0.1062)       (0.1187)         Kinki       1.2972       ***         (0.1129)       (0.1170)         Chugoku       1.5651       ***         (0.2042)       (0.1693)         Shikoku       1.5960       ***         (0.2589)       (0.1187)         Kyushu       0.8652       1.1116         (0.1340)       (0.1195)         Number of obs       1300       1187         LR chi2(32)       905.91       658.64         Prob > chi2       0.0000       0.0000         Log likelihood       -7670.7728       -6990.1984	Tokai	1.1571		1.2276	* *
Kinki       1.2972       ***       1.2895       ***         (0.1129)       (0.1170)       (0.1170)       (0.1170)         Chugoku       1.5651       ***       1.2560       *         (0.2042)       (0.1693)       (0.1693)       (0.1822)         Shikoku       (0.2589)       (0.1822)         Kyushu       0.8652       1.1116         (0.1340)       (0.1195)         Number of obs       1300       1187         LR chi2(32)       905.91       658.64         Prob > chi2       0.0000       0.0000         Log likelihood       -7670.7728       -6990.1984		(0.1062)		(0.1187)	
(0.1129)       (0.1170)         Chugoku       1.5651       ***         (0.2042)       (0.1693)         Shikoku       1.5960       ***         (0.2589)       (0.1822)         Kyushu       0.8652       1.1116         (0.1340)       (0.1195)         Number of obs       1.300       1187         LR chi2(32)       905.91       658.64         Prob > chi2       0.0000       0.0000         Log likelihood       -7670.7728       -6990.1984	Kinki	1.2972	* * *	1.2895	* * *
Chugoku       1.5651       ***       1.2560       *         (0.2042)       (0.1693)       (0.1693)         Shikoku       1.5960       ***       1.0942         (0.2589)       (0.1822)       (0.1822)         Kyushu       0.8652       1.1116         (0.1340)       (0.1195)         Number of obs       1300       1187         LR chi2(32)       905.91       658.64         Prob > chi2       0.0000       0.0000         Log likelihood       -7670.7728       -6990.1984		(0.1129)		(0.1170)	
Shikoku       (0.2042)       (0.1693)         Shikoku       1.5960       ***       1.0942         (0.2589)       (0.1822)         Kyushu       0.8652       1.1116         (0.1340)       (0.1195)         Number of obs       1300       1187         LR chi2(32)       905.91       658.64         Prob > chi2       0.0000       0.0000         Log likelihood       -7670.7728       -6990.1984	Chugoku	1.5651	* * *	1.2560	*
Shikoku       1.5960       ***       1.0942         (0.2589)       (0.1822)         Kyushu       0.8652       1.1116         (0.1340)       (0.1195)         Number of obs       1300       1187         LR chi2(32)       905.91       658.64         Prob > chi2       0.0000       0.0000         Log likelihood       -7670.7728       -6990.1984		(0.2042)	4.7.1	(0.1693)	
Kyushu         (0.2589)         (0.1822)           Kyushu         0.8652         1.1116           (0.1340)         (0.1195)           Number of obs         1300         1187           LR chi2(32)         905.91         658.64           Prob > chi2         0.0000         0.0000           Log likelihood         -7670.7728         -6990.1984	Shikoku	1.5960	* * *	1.0942	
Kyusnu         0.8652         1.1116           (0.1340)         (0.1195)           Number of obs         1300         1187           LR chi2(32)         905.91         658.64           Prob > chi2         0.0000         0.0000           Log likelihood         -7670.7728         -6990.1984	TZ-na h	(0.2589)		(0.1822)	
Number of obs         (0.1340)         (0.1195)           Number of obs         1300         1187           LR chi2(32)         905.91         658.64           Prob > chi2         0.0000         0.0000           Log likelihood         -7670.7728         -6990.1984	kyushu	0.8652		1.1116	
Number of obs         1300         1187           LR chi2 (32)         905.91         658.64           Prob > chi2         0.0000         0.0000           Log likelihood         -7670.7728         -6990.1984		(U.1340)		(U.1195)	
Br Chi2 (32)         903.91         058.04           Prob > chi2         0.0000         0.0000           Log likelihood         -7670.7728         -6990.1984	NUMBER OF ODS	L3UU 005 01		118/	
Log likelihood -7670.7728 -6990.1984	Prob > chi2	0.0000		0.0000	
	Log likelihood	-7670.772	8	-6990.198	34

Note: Micro-data from the Preference Parameters Study, wave 2011. Robust standard errors are in parentheses. The level of significance at 1% is \*\*\*, 5% is \*\*, and 10% is \*.

	Wives	Wives born before 1959 Wives born after 1960						
	women		men		women		men	
Time inconsistency	0.8138	*	0.8112	*	0.9949		1.0447	
	(0.0929)		(0.0932)		(0.1029)		(0.1012)	
	1.0649		0.9694		1.2822	* *	0.9612	
Reverse T1	(0.1340)		(0.1297)		(0.1612)		(0.1371)	
Wife's marriage age	0.4757	* * *	0.3794	* * *	0.3929	* * *	0.4816	* * *
	(0.0238)		(0.0336)		(0.0472)		(0.0573)	
Wife's marriage age^2	1.0088	* * *	1.0137	* * *	1.0121	* * *	1.0090	* * *
	(0.0007)		(0.0015)		(0.0022)		(0.0021)	
H's annual earned	1.0002		1.0156		0.9628		0.9638	
income (million ven)	(0, 0254)		(0.0264)		(0.0256)		(0.0283)	
W's annual earned	0 9982		0 9970		1 0032		0 9710	
income (million ven)	(0.0368)		(0.0364)		(0 0312)		(0.0317)	
Wife's education:	(0.0300)		(0.0304)		(0.0312)		1 4467	
Junior high school	1.21/9		1.0210		1.1307		1.440/	
Callere	(0.1892)	.1.	(0.1465)		(0.3363)		(0.3771)	
College	1.214/	*	0.8602		0.8949		0.8529	
	(0.1433)		(0.1049)		(0.0840)		(0.0862)	
University	0.9241		1.0372		0.7490	* *	0.8404	
	(0.1394)		(0.1670)		(0.0907)		(0.1194)	
Graduate	1.1734		1.1550		1.0131		0.9572	
	(0.8524)		(1.1773)		(0.3420)		(0.5093)	
Husband's number of	1.0898	* * *	1.0773	* *	0.9133	* *	0.9997	
siblings	(0.0321)		(0.0330)		(0.0397)		(0.0474)	
Wife's number of	1.0156		1.0052		1.0658		0.9835	
siblings	(0.0371)		(0.0339)		(0.0498)		(0.0493)	
H's mother was	0.9596		0.9423		0.9695		0.9360	
working when H was 15	(0, 0869)		(0, 0.881)		(0,0850)		(0, 0954)	
W's mother was	1 0445		1 2390	* *	1 0853		1 2116	*
working when W was 15	(0 0974)		(0 1228)		(0 1012)		(0 1212)	
"Do you want to have a	1 2446		(0.1220)		1 5000	*	(0.1212)	
child in the future?"	1.2440		1.1/11		1.3990		(0.2451)	
Wifele birth weer	(0.2992)		(0.2423)		(0.4172)		(0.2451)	
wile s birth year	1.0/12		0.9892					
	(0.2442)		(0.2665)					
40's	0.9604		0.8947					
~~·	(0.0993)		(0.0941)					
60's					0.3842	* * *	0.5391	* * *
					(0.0671)		(0.1181)	
70's					0.4848	* * *	0.6202	* *
					(0.0848)		(0.1379)	
80′s					(omitted)	* * *	(omitted)	
Size of	1.1664		0.9285		0.9660		0.6803	* * *
municipalities:								
ordinance-designated	(0.1289)		(0.1068)		(0.0965)		(0.0733)	
city								
iess than 100,000 pop	1.1325		1.1697		1.1897	*	1.0089	
	(0.1289)		(0.1367)		(0.1252)		(0.1117)	
town and village	1.2858	*	1.3788	*	1.0837		0.7405	*
	(0.1956)		(0.2275)		(0.1677)		(0.1278)	
Regional block:	0.7643		0.8445		1.1330		1.4044	
Hokkaido	(0.1693)		(0.1923)		(0.2563)		(0.3541)	
Tohoku	1.0967		1.4241	*	1.1194		1.2638	
	(0.2159)		(0.3062)		(0.2100)		(0.2106)	
Koshinetsu	1.2091		0.6096	* *	1.6550	* *	1.3939	*
	(0.2434)		(0.1371)		(0.3595)		(0.2746)	
Hokuriku	2.0948	* * *	0.8150		0.8397		0.3004	* * *
	(0.5255)		(0.2497)		(0.2066)		(0.0879)	
Tokai	1.1581		1.3530	* *	1,1203		1.0613	
TOWAT	(0 1601)		(0 1881)		(0 1426)		(0 1498)	
Kinki	1 21001)	**	1 //20	* * *	1 2002	**	1 0007	
IVTIINT	1.3100		10101		1.2902		10 1000/	
Churchen	1 0015	* + +	(0.150)		(U.LJJO) 1 /1//	+	1 6 6 5 4	* + +
спидоки	1.0ULJ		U. J. D. J. D. D. D. D. J. D. D. J. D. D. J. D. D. J. D.		1.4104	^	1.00034	
	(U.35UI)	4-1-1-	(U.1882)		(U.23/9)		(U.3U31)	
SILKOKU	2.2590	~ * *	0.8634		1.2484		1.2226	
77	(0.5329)		(0.2108)		(0.2883)		(0.2871)	
Kyushu	1.0375		1.2447		1.2524		0.9431	
	(0.1622)		(0.1911)		(0.1736)		(0.1492)	
Number of obs	612		568		688		619	
LK Ch12(29)	393.62		322.65		529.11		385.38	
Frop > Cn12	0.0000 -3177 0750		-2920 1710		U.UUUU _3507 3010		-3225 1600	
TOA TTVETTHOOD	-2111.2170		-∠ン∠ン・4/⊥Ö		- 7 7 7 1 • 7 0 7 0		-JZZJ.IUU9	

Log <u>likelinood</u> -31/1.9/38 -2923.4/18 -3597.3010 -3223.1009 Note: Micro-data from the Preference Parameters Study, wave 2011. Robust standard errors are in parentheses. The level of significance at 1% is \*\*\*, 5% is \*\*, and 10% is \*.

	Wives with HS or less education			Wives with College or more				
	women		men		women	eauc	men	
Time inconsistency	0.8365	*	0.8894		0.9042		0.9142	
	(0.0859)		(0.0850)		(0.0996)		(0.1058)	
Reverse TI	1.0861		0.9252		1.1970		1.0359	
Wife/a marriage age	(0.1243)	* * *	(0.1104)	* * *	(0.16/3)	***	(0.1/48)	* * *
wile 5 Maillage age	(0.0219)		(0.0327)		(0.0297)		(0.0903)	
Wife's marriage age^2	1.0084	* * *	1.0118	* * *	1.0126	* * *	1.0063	* *
	(0.0007)		(0.0013)		(0.0013)		(0.0028)	
H's annual earned	0.9538	*	1.0304		1.0027		0.8988	* * *
Income (million yen)	(0.0242)		(0.0248)		(0.0272)		(0.0291)	
w's annual earned	1.0150		1.0297		0.9822		0.9443	*
Wife's education:	(0.0303)		(0.0373)		(0.0319)		(0.0320)	
Junior high school	(0.1558)		(0.1445)					
College	(0.1000)		(0,1110)		0.8529		0.6100	
					(0.2647)		(0.2882)	
University					0.6384		0.7294	
Cree dure to a					(0.1987)		(0.3405)	
Graduale								
Husband's number of	1.0321		1.0445	* * *	1.0280		1,1066	* *
siblings	(0.0286)		(0.0316)		(0.0473)		(0.0521)	
Wife's number of	1.0448		1.0068		0.9711		1.0328	
siblings	(0.0352)		(0.0333)		(0.0533)		(0.0514)	
H's mother was	0.9917		0.8775		1.0040		1.0473	
Working when H was is	(0.0822)		(0.0758)		(0.0970)		(0.1221)	
working when W was 15	1.0196		L.2/55 (0 1157)		L.0965		1.1523	
"Do you want to have a	(0.0004)		(0.1137)		(0.1091)		1 0563	
child in the future?"	(0.2866)		(0.1907)		(0.2727)		(0.3435)	
Wife's birth year	1.0125		1.0076		1.2696		( ,	
cohort 307s	(0.2637)		(0.2734)		(0.5981)			
40's	0.8688		0.9910		1.5312	* *	0.7691	
601-	(0.1002)		(0.1161)		(0.2792)	ىلەر باد	(0.1601)	
60'S	0.8998		0.9042		0.7536	* *	0.83/8	
70 <b>′</b> s	1 1976		1 1096		0.8876		0 7891	
	(0.1453)		(0.1409)		(0.1148)		(0.1176)	
80′s	2.7984	* * *	1.4480		1.7487	* *	1.3014	
	(0.6054)		(0.4032)		(0.4653)		(0.4333)	
Size of	1.0488		0.8460		1.1924		0.8022	*
ordinance-designated	(0.1082)		(0.0865)		(0.1321)		(0.1020)	
city	(***=**=)		(*******)		( • • • - • /		( • • - • - • )	
less than 100,000 pop	1.0990		1.0325		1.3158	* *	1.0282	
town and willows	(0.1087)	ىد	(0.1045)		(0.1601)		(0.1372)	
cown and village	1.3061	~	1.1374		0.8449		(0 1452)	^
Regional block:	0.8699		1.0680	* * *	1.0264		1.2496	
Hokkaido	(0.1707)		(0.2075)		(0.2755)		(0.4336)	
Tohoku	0.9809		1.2585	*	1.6741	* *	1.5085	* *
	(0.1641)		(0.2169)		(0.3878)		(0.3161)	
Koshinetsu	1.0732		0.8705	* *	2.5675	* * *	1.1591	
Hokuriku	(0.19/8)	*	(0.1584)	*	(0.6280)		(0.3034)	
HOKULIKU	(0 2908)		(0.1317)		(0.2689)		(0, 2165)	
Tokai	1.1105		1.2703		1.2697		1.1102	
	(0.1356)		(0.1603)		(0.1881)		(0.1780)	
Kinki	1.2442	*	1.2810		1.2537	*	1.2515	
	(0.1528)		(0.1581)		(0.1613)		(0.1783)	
Chugoku	1.6417	* * *	1.4219		1.5738	* *	1.2111	
Shikoku	(U.SUI6) 1 7965	* * *	(U.∠64U) 1 2278		(U.JUJ4) 1 5637	*	(U.2403) 0 6577	
onthonu	(0.3910)		(0.2584)		(0.3917)		(0.1934)	
Kyushu	1.0122		1.1811		1.4804		0.9754	
	(0.1400)		(0.1642)	<u> </u>	(0.2279)		(0.1722)	
Number of obs	742		718		558		469	
LK CN12(29) Prob > chi2	489.86		392.88 0,0000		401.82		246.15	
Log likelihood	-3982.2213		-3870.5414		-2820.9327		-2342.4823	

Note: Micro-data from the Preference Parameters Study, wave 2011. Robust standard errors are in parentheses. The level of significance at 1% is \*\*\*, 5% is \*\*, and 10% is \*.

		Late childbearing age 30						
		Loo	git			Pro	bit	
Time inconsistency	0 3124		0 6099	* *	0 1671		0 3859	* *
Time inconsistency	(0.3089)		(0.2838)		(0.1663)		(0.1578)	
Reverse TI	0.1228		-0.2315		0.0123		-0.0749	
	(0.3709)		(0.3981)		(0.1988)		(0.2126)	
Wife's marriage age	1.4756	* * *	1.9738	* * *	0.7767	* * *	0.9562	* * *
	(0.2414)	de de de	(0.3224)	also de ste	(0.1067)	also de als	(0.1606)	de de de
Wife's marriage age^2	-0.01/4	***	-0.0266	* * *	-0.0091	* * *	-0.0126	* * *
U/a appual carpad	(0.0036)		(0.0049)		(0.0013)		(0.0023)	
income (million ven)	(0 0734)		(0.0735)		(0, 0404)		(0.0415)	
W's appual earned	-0.0659		-0.0939		-0.0450		-0.0393	
income (million yen)	(0.1042)		(0.1034)		(0.0563)		(0.0584)	
Wife's education:	-1.2210		-0.1007		-0.6835	*	-0.1412	
Junior high school	(0.8058)		(0.4754)		(0.3701)		(0.2484)	
College	-0.3592		0.5324	*	-0.2235		0.2899	*
	(0.3343)		(0.2873)		(0.1780)		(0.1601)	
University	0.3359		-0.4377		0.1664		-0.3014	
Cree durate	(0.4053)		(0.4112)		(0.2183)		(0.2289)	
Graduate								
Husband's number of	-0.2996	* * *	-0.0909		-0.1650	* * *	-0.0587	
siblings	(0.1000)		(0.0933)		(0.0532)		(0.0520)	
Wife's number of	0.0126		0.0892		0.0161		0.0482	
SIDIIIGS	(0.1189)		(0.1069)		(0.0615)		(0.0569)	
working when H was 15	(0.2812)		(0.2574)		(0.1539)		(0.1143)	
W's mother was	-0.0447		0.0337		-0.0396		-0.0238	
working when W was 15	(0.2721)		(0.2596)		(0.1526)		(0.1447)	
"Do you want to have a	0.7395		0.1931		0.2429		0.1191	
child in the future?"	(1.2051)		(0.5722)		(0.6323)		(0.3253)	
Wife's birth year	-0.7200		0.3753		-0.4361		0.2834	
cohōrt 307s	(0.7064)		(0.7602)		(0.3931)		(0.4038)	
40′s	-0.1688		-0.2235		-0.0985		-0.0480	
<u> </u>	(0.3226)		(0.3727)		(0.1741)		(0.2011)	
60° S	0.4607		(0.3956)		0.2620		0.0832	
Size of	-0 0296		-0.0168		0 0413		0 0312	
municipalities:	0.0290		0.0100		0.0110		0.0012	
ordinance-designated	(0.3295)		(0.3503)		(0.1830)		(0.1817)	
less than 100,000 pop	-0 5430		-0 2193		-0 2900		-0 0908	
1005 01111 100,000 pop	(0.3454)		(0.3110)		(0.1880)		(0.1823)	
town and village	0.0509		0.1716		0.0267		0.0517	
2	(0.4489)		(0.3832)		(0.2396)		(0.2194)	
Regional block:	0.0382		-0.6951		-0.0070		-0.3848	
Hokkaido	(0.7778)		(0.7227)		(0.3798)		(0.3712)	
Tohoku	0.6850		-0.8230		0.3382		-0.4492	
Vachington	(U.6106)		(0.5954)		(U.J190)	+	(U.J198)	
ROSHIMELSU	-0./901 (0 5300)		-0.0012 (0.7211)		-0.3020 (0.2026)	~	-U.1/2U (0 3952)	
Hokuriku	-0.3847		-1.1952		-0,1772		-0.7527	
nonatina	(1.2046)		(1.0446)		(0.5565)		(0.5310)	
Tokai	-0.6262		-0.6038		-0.2962		-0.3651	
	(0.5133)		(0.4212)		(0.2666)		(0.2253)	
Kinki	-0.1341		-0.3827		-0.1206		-0.2740	
	(0.3475)		(0.3337)		(0.1908)		(0.1868)	
Chugoku	-1.0147	*	-0.2243		-0.5987	* *	-0.0319	
Shikoku	(U.5331)		(U.6892) _0 3199		(0.2860)		(U.3/98) _0 1577	
SILLKOKU			(0.5772)				(0.3426)	
Kyushu	0.3169		-0.1567		0.1778		-0.0478	
	(0.4268)		(0.3992)		(0.2313)		(0.2253)	
cons	-28.0116	* * *	-34.9343	* * *	-14.6997	* * *	-17.2401	* * *
Number - Caller	(4.2415)		(5.1939)		(1.9678)		(2.5482)	
Number OI Obs Wald chi2	665 117 02		650 126 74		665 137 64		650 154 36	
Prob > chi2	0.0000		0.0000		0.0000		0.0000	
Pseudo R2	0.3824		0.3566		0.3757		0.3404	
Log pseudolikelihood	-199.36949		-204./2638		-201.55804		-209.93412	

Note: Micro-data from the Preference Parameters Study, wave 2011. Robust standard errors are in parentheses. The level of significance at 1% is \*\*\*, 5% is \*\*, and 10% is \*.

	Number of c	Number of children ever born (Std. Err.)			
	women		men		
Time inconsistency	-0.1077		-0.0659		
	(0.0/83)		(0.0/32)		
Reverse time inconsistency	-0.0511		-0.1302		
Mifele menuiene ene	(0.0930)	++	(0.0876)	+	
wile's marriage age	-0.0986	~ ^	-0.1092	^	
Wifeld marriage age^?	(0.0437)		(0.0651)		
WITE S Marriage age 2	0.0009		0.0011		
Husband's appual carped income (million war)	(0.0008)		(0.0011)		
Russand's annual earned income (million yen)	-0.0048		-0.0114		
Wife's annual earned income (million yen)	(0.0191)		(0.0178)		
wire 5 annuar earned income (mirring yen)	(0.0334		(0.0001		
Wife's education: Junior high school	-0 1295		(0.0240)		
wite 5 cadeación, bantor nigh Schoor	(0.1211)		(0 1013)		
College	0 0794		0 1803	* *	
0011090	(0.0819)		(0.0781)		
University	0 0892		0 0819		
011101010101	(0 1170)		(0 1116)		
Graduate	-0 4776	*	-0 9932		
01444400	(0 2739)		(0 6948)		
Husband's number of siblings	0 0147		-0 0183		
nabbana o nambor or orbiringo	(0, 0228)		(0, 0222)		
Wife's number of siblings	0.0150		0.0096		
NITO O NAMOOT OI DIDIINGO	(0.0284)		(0.0231)		
H's mother was working when H was 15 years old	0 0388		0 0770		
	(0.0617)		(0.0646)		
W's mother was working when W was 15 years old	0.1777	* * *	-0.0236		
······································	(0, 0626)		(0.0669)		
"Do you want to have a child in the future?"	0.7131	* * *	0.9260	* * *	
	(0.1856)		(0.1594)		
Wife's birth year cohort 20's	(,		-0.9067	* * *	
*			(0.2438)		
30's	-0.4510	* *	0.0474		
	(0.1771)		(0.1852)		
40′s	-0.0433		-0.0258		
	(0.0766)		(0.0726)		
60′s	0.0157		-0.0774		
	(0.0992)		(0.1051)		
The size of municipalities: ordinance-designated city	0.0595		-0.0576		
	(0.0778)		(0.0800)		
less than 100,000 pop	0.2226	* * *	0.1570	* *	
	(0.0807)		(0.0771)		
town and village	-0.0380		0.0520		
	(0.1299)		(0.1056)		
Regional block: Hokkaido	0.1557		0.1239		
	(0.1804)		(0.1611)		
Tohoku	-0.0479		-0.0316		
	(0.1510)		(0.1351)		
Koshinetsu	-0.0943		0.0304		
	(0.1318)		(0.1146)		
HOKUTIKU	0.0382		-0.0209		
m - 1 '	(0.1498)		(0.2199)		
TOKAL	0.0070		-0.0185		
TZ i - l-i	(0.0951)		(0.0896)		
KIIIKI	0.0870		-0.0098		
Churcolru	(0.0900)		(0.0950)		
Chugoku	0.2225		0.2355		
Chiltolau	(0.1834)		(0.1004)		
SHIKOKU	0.0095		-0.088/		
Kuuchu	(0.1011)		(0.1011)		
Nyuonu	(0 1163)		(0 0001)		
CODS	3 1303	* * *	3 2281	* * *	
00110	(0.6324)		(0.9201)		
Number of obs	744		72.7		
F	3.69		/		
Prob > F	0.0000		o		
K-squared	U.1517		U.1887		

Note: Micro-data from the Preference Parameters Study, wave 2011. Robust standard errors are in parentheses. The level of significance at 1% is \*\*\*, 5% is \*\*, and 10% is \*.