

Dual-earner Couple Society as a Solution?:

From a Perspective of Studies on Child-birth

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Abstract

East Asian societies, including Japan, are suffering from the lowest-low fertility rate. This study inquires about the possible factors of this low fertility problem with special attention to female labor force participation. The preliminary analysis suggests that dual-earner couple society is a solution for improving birthrates, where women's income complements men's income in the age of lower level of economic growth. It also argues about the social and economic conditions of the dual-earner couple society. The US model presupposes the income gap where low-income group provide reasonable care services through labor market. The Nordic model relies on massive public employment to provide care work as the social service. None of these conditions are easily attainable in East Asian societies, especially in Japan. Another problem of dual-earner society is its unintended consequence, namely the widening between-household income gap. In a dual-earner society, women's labor force participation no longer works as a moderation, where wives usually take part in the labor market only if their husband's income is insufficient. Through the assortative mating, a rich man is more likely to marry with a rich woman. Extra policy for income redistribution might be required to ease this economic gap possibly derived from the dual-earner couple orientation.

Keywords

low fertility, women's labor force participation, East Asian societies

1 The population problem and beyond

In the 1970s, few people, including most scholars, expected that in the near future most East Asian societies would suffer seriously from the problem of declining birth rate. In Japan, the word "falling birthrate" first appeared in the newspaper as late as 1991. In recent years, Japan is at the forefront of the world in terms of the aging competition, namely off the chart. Other East Asian societies such as Korea and Taiwan follow, in most cases with higher rates.

Scholars also find that the low birthrate (lowest low fertility with 1.5 or below, to be exact) is not a fate of economic development. Some economically affluent countries, for example the USA or Sweden, do not share the same problem. Figure 1 shows the proportion of old age population and total fertility rate. Most economically advanced societies are located in the left side (low fertility

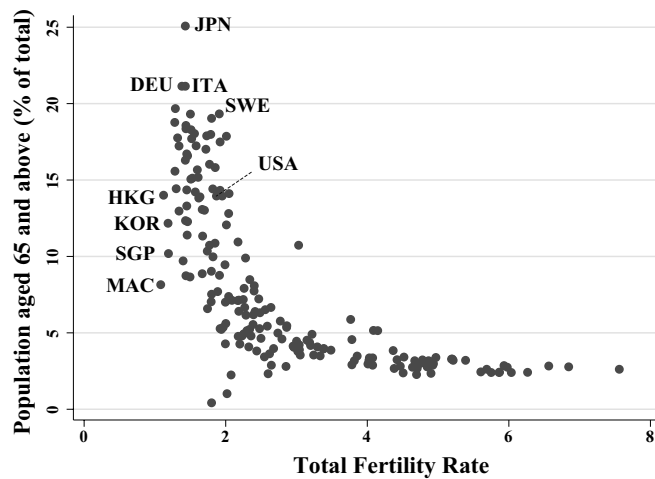


Figure 1. Proportion of old age population and total fertility rate in 2013

(Note) Data: World Bank, World Development Indicators, accessed in January 2015.

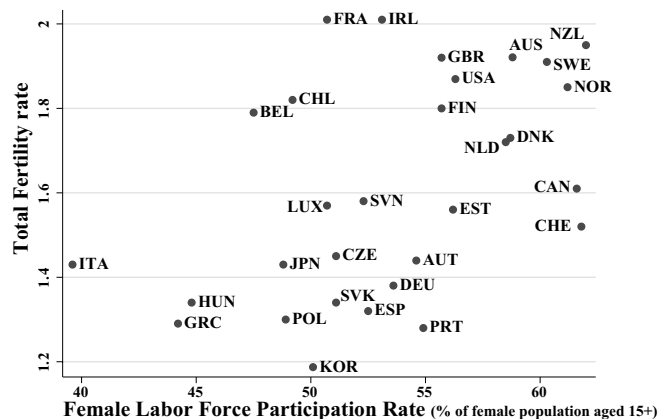


Figure 2. Total fertility rate and female labor force participation rate in 2013

(Note) Data: World Bank, World Development Indicators, accessed in January 2015. OECD countries with the GDP per capita with \$20,000 or above (PPP) and without Israel and Iceland.

area). However, there is a marked variation even among OECD countries. Some family researchers or demographers have focused on this difference and tried to explain it using comparative data.

Among many possible factors that cause the low birth rate, women's participation in the labor force has received most attention among academicians and policy makers. An important point of discussion comes from the discrepancy between the theoretical expectation and the actual empirical outcome.

Traditional economic theory anticipated that women's economic activity decreases the birthrate through increasing opportunity cost because having children can disrupt women's career. Despite this theoretical expectation, actual data seem to support the opposite view. As Figure 2 suggests, the relationship between the female labor force participation rate (FLP) and total fertility rate is a positive one. That is, countries with low fertility rate are more likely to have lower proportion of



Figure 3. Total fertility rate and female civilian employment rate in 1962 and 2012

(Note) Data: OECD.stat, accessed in 2015.

economically active women.

Two questions regarding this “apparent” contradiction have been raised and addressed by several researchers. First one is the question on whether this positive relationship is true or causal, and not spurious. The second one builds on the first one in that if the relationship is actually positive, what possible theory or theories can explain this contradiction?.

The existing studies suggest that the positive relationship is spurious, or insignificant at best (Engelhardt et al., 2004; Engelhardt and Prskawetz, 2004). Once the country heterogeneity was taken into account, the relationship between the two turned out to be always negative.

In the descriptive level, the reversal of the relationship can be observed (Rindfuss et al., 2003), as seen in Figure 3. There was a negative relationship between female participation in the labor force (represented by civilian employment rate) and birthrate until the 1970s, but it turned to a level or positive one since the 1980s. This change in the sign itself, however, is reported to be a fake one (Kögel, 2004). This counterfeit reversal occurred because the magnitude of change in female participation in the labor force and fertility level varies among countries. Countries such as Japan experienced a steeper decline in both female participation in the labor force and birthrate, while some countries, such as the U.S., experienced a relatively slower decline.

Existing studies, however, did not include most recent data. As we will demonstrate in the next section, there are a few reasons for which we argue that positive relationship is actually observed.

In this paper, the author tries to show that the female participation in the labor force has a positive effect to the birth rate, once the recent data is included in the statistical analysis. Theoretical explanation for this effect is that women’s employment has the income effect for couple formation and birth. As a series of public family supports or employer-provided (extra-statutory) benefits that successfully offsets the opportunity cost of family life, women with higher earning capacity are more likely to marry or have children.

This study further argues that a dual-earner couple society, typically represented by the USA and Sweden, is not possible only by the family support system provided by public organizations or private-firm employers. There are relatively unfocused conditions that constrain possible options for policy makers in East Asian countries.

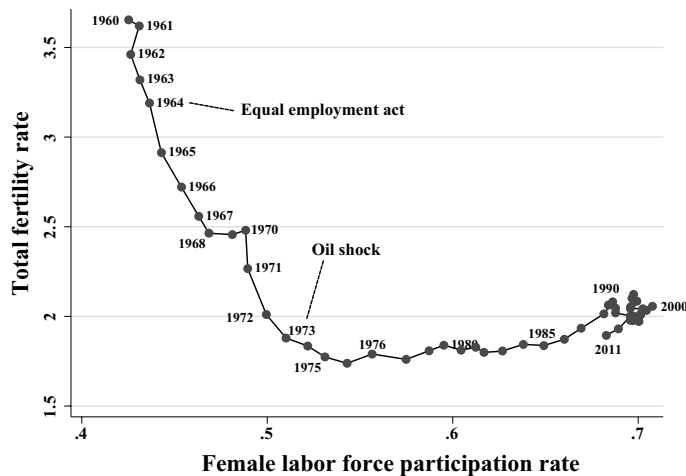


Figure 4. Total fertility rate and female civilian employment rate in the USA

(Note) OECD, Employment and labor force statistics.

Finally, this study will call attention to unintended or unfavorable consequences of dual-earner couple society.

2 “Dual-earner couple” solution

Before executing model estimations, several descriptive analyses are provided to obtain some insights on the changing relationship between female participation in the labor force and fertility rate. Previous studies argue that the change in the sign of this relationship is spurious. However, we may be able to portray a slightly different perspective by the following charts.

Figure 4 shows the change in total fertility rate and the rate of female participation in the labor force in the USA during 1960 and 2011, approximately half a century. Until the 1970s, the relationship was manifestly negative. But it became neutral from the late 1970s, and then changed to a positive one from the late 1980s. A similar pattern can be found in the case of Sweden (see Figure 5). Although the figures are not shown, this reversal cannot be found in the case of Japan or Germany, where birthrates have not shown distinct recovery and female economic activity has remained relatively sluggish.

The fact that countries with low female participation in the labor force also suffer from lowest-low birthrate remains a “puzzle” in theoretical explanation of heterogeneity in birthrate among economically advanced countries (Engelhardt and Prskawetz, 2004, p.43). Popular economic theories, such as New Home Economics, argue for the substitution effect on fertility by female employment (Butz and Ward, 1979; Lesthaeghe and Willems, 1999). That is, increase in women’s economic engagement and decrease in gender wage gap lead to the decline in birthrate. Sociological theory, on the other hand, predicts that if the difficulty of balancing paid work and family life is eliminated either by family support programs or flexible working hours, negative effect of female employment on birthrate can be partly cancelled (Yamaguchi, 2008).

Both theories, however, cannot explain the country heterogeneity, especially the trend after the

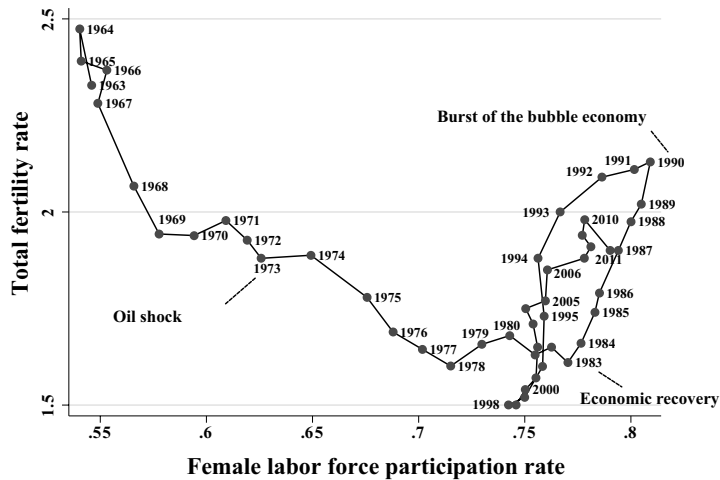


Figure 5. Total fertility rate and female civilian employment rate in Sweden

(Note) Data: OECD, Employment and labor force statistics.

1980s. If the theories are true, a country with economically inactive female population enjoys higher level of fertility, which is not the case according to the empirical data. Also, theories cannot explain the fact that countries with higher female employment rate are more likely to have higher, not the same level of, birthrate compared to that of countries with lower female employment.

In order to solve this puzzle, extra factors have to be included in the theoretical framework. Difference in people's attitude, or ideational factor, can be a possible candidate. This study, however, does not address this possibility because it is almost impossible to obtain data containing the change in people's attitude for decades in many countries. Instead, it focuses on the income effect of women's labor force on birthrate.

During the 1980s, most western countries faced severe increase in unemployment rate. Although virtually every country experienced steep rise in male unemployment rate in 1980s and 1990s, in some countries birthrates did not meet notable decline and in other countries birthrates actually increased. The theoretical expectation here is that the increase of women's participation in the labor force has had a positive income effect to couple formation and childbirth. Recent data shows that the proportion of married people, once including cohabitated ones, is higher in the USA and Sweden than that of Japan and Korea (Tsutsui, 2014). The dual-earner couple strategy can be seen as a factor that counterworks the lowering birthrate in previous male-breadwinner societies.

In this study, data from relatively longer time period is used to estimate the effect of female participation in the labor force on birthrate (TFR)¹⁾, taking men's unemployment rate into account. Interaction term between men's unemployment and FLP is included in the model in order to identify if the effect of FLP is greater when men's employment condition is damaged.

The model includes the lagged term of the outcome variable (TFR) and is likely to be contaminated by country heterogeneity. About the other explanatory variables (FLP, male unemployment rate and GDP per capita), the t-1 data is included. We use within (fixed-effects) and GMM (Generalized Method of Moments) estimators to eliminate country-level individual effects and to correct error estimates with possible serial correlation.

A major drawback of this analysis is that it does not consider various confounding factors, such

Table 1: Models predicting birthrate in OECD countries (1962-2011)

	Within	P	Within (Interaction)	P	GMM	P	GMM (Interaction)	P
TFR	0.954	0.000	0.949	0.000	0.947	0.000	0.932	0.000
Male unemployment rate	-0.256	0.046	-1.136	0.005	-0.403	0.000	-1.176	0.000
FLP	0.233	0.003	0.165	0.030	0.296	0.000	0.242	0.000
Interaction (male unemployment and FLP)			1.591	0.027			1.478	0.001
GDP per capita	-0.025	0.076	-0.031	0.025	-0.038	0.000	-0.052	0.000
Intercept	0.195	0.104	0.300	0.017	0.307	0.001	0.508	0.000
<i>N</i> (Observation)	1,010		1,004		993		993	
<i>N</i> (Country)	22		22		22		22	

(Note) Data: TFR from World Bank, World Development Indicators (accessed in 2015), Male unemployment rate and FLP from OECD, Employment and Labor Force Statistics (accessed in 2014), and GDP per capita (PPP) from Penn World Table 8.0.

as family friendly policy interventions, gender wage gap, educational level of women, etc. There is a tradeoff between the period range of data and available relevant variables. For instance, OECD published a composite indicator of work/family reconciliation policies and relevant flexible work arrangement in 2001 (OECD, 2001), but it is difficult to obtain data in the longitudinal mode. The analysis here is tentative at best, including only the GDP per capita. A better analysis with more control variables is the future task.

Table 1 shows the result of the estimation. Contrary to existing theories and empirical studies, FLP has positive effect in every model. If the FLP increase in 10%, the TFR is estimated to increase by approximately 0.02-0.03. The effects of male unemployment are consistent with the theoretical prediction. The worsening of male employment condition leads to the decrease of birthrate. Same results are provided concerning the interaction effect. Both the within and GMM estimator show a significant effect of the interaction between FLP and male unemployment.

Figure 6 indicates the predicted values of the TFR if the FLP and male unemployment rate take certain values (as indicated in the figure) based on the result of the within interaction model. TFR (t-1) is fixed at 2.0 and GDP at 10.0, but these values do not affect the relative values in the Figure 6. The FLP has positive effect in both male unemployment levels and it is even more effective when the male unemployment rate is high.

An interpretation of this result is that women's employment worked as compensation to men's unstable employment. A plausible scenario is that when men's employment and labor income is unstable, the dual-earner solution comes as a counter scheme instead of the male-breadwinner model. Countries where male-breadwinner model is relatively persistent, people face difficulties in couple formation and childbirth.

In fact, the proportion of couple formation, that is, the proportion of the married and the cohabitating people is higher in the countries with relatively higher birthrate. Proportion of married or cohabitating couple for younger population (age 25 to 34) is 62% in the US and 68% in the Sweden, while the same figures are 59% and 57% in Japan and Korea, respectively (Tsutsui, 2014).

The income effect of women's participation in the labor force also corresponds to the previously posed puzzle. Previous studies argue that the negative effect of women's employment can be cancelled by family friendly public policies or work arrangements, but could not explain the



Figure 6. Predicted TFR based on the within interaction model

positive effect of women's employment on the birthrate. Dual-earner solution theory addresses this problem. Further, it provides rather consistent view on the simultaneous occurrence of increasing male unemployment and increasing birthrate in some countries.

3 Two ways to dual-earner society and their problems

Although the analysis here suggests that the dual-earner couple solution is effective for the low-birthrate problem, there are a few things to consider before policymakers head in this direction.

The first point is a technical one: the validity of this analysis result. The model estimation presented above remains as a hypothesis. It should be tested with more factors to be controlled, with more sophisticated estimation methods. Moreover, even if the internal validity of the analysis becomes secured, still the external validity should be carefully inspected. The analysis includes data from some East Asian countries, but there might be substantial interaction between unobserved individual effects and the effects of female labor force participation. Specifically, the effect of FLP in East Asian context might not show a magnitude of effect compared to other European or North American societies. A more precise causal effect should be known with experimental data, which is very difficult to obtain.

The second point is its feasibility. Different societies have different factors that have contributed to the increase in female labor force participation. There are main possible causes for the increasing female employment: the industrial transformation such as the rise of service industry (Goldin, 1995; Szulga, 2014), elimination of discriminative (sexist) regulations in the labor market (O'Conner et al., 1999), various family friendly support programs (Gauthier and Hatzius, 1997), re-distribution of care work in household and in the wider society, and so on. Regarding the dual-earner couple society, the last factor is especially important.

There are several barriers that hold back the re-distribution of unpaid work. The ideational factor would be the one that have collected wider attention (Greenstein, 1996). Relatively unremarked arguments, though, is the economic or institutional explanation.

Because of the higher labor cost of care work derived from face-to-face interaction included in care-service jobs, purchasing the service from the private labor market is not a dominant custom among OECD countries. In some countries, there are (more or less) systematized private labor markets for care work: North America and part of the East Asian societies are examples. However, as Estévez-Abe (2013) argues, private market for care work is only possible when there is a certain level of domestic income disparity. Because the “production cost” of care work does not decrease as other non-service products such as television and PC, the price of care work tends to be relatively high. That is the reason why, as some Marxist feminists point out (Delphy, 1893), gender gradient domestic unpaid work is said to be exploitative. Private market for care work assumes the existence of groups that can, or are force to, supply their labor force with discounted price. In a male-breadwinner society, women who are economically dependent on the husband provide care work. In a dual-earner society, women with less earning potential or foreign workers meet the same need.

If a society has public programs for care work provision, domestic income gap is no longer a condition of the externalization of care. Provision of care work by public organization can be typically seen in Nordic societies. However, this solution in practice often accompanies two things that are not familiar for other societies, especially in East Asia: big social expenditure and occupational segregation by sex. For instance, approximately 60% of employed women in Sweden work in the public sector, which itself is possible by large government spending.

Public sector employment is one of the main reasons why the female labor force participation rates in the Nordic countries are higher than most of the other countries. Most increase in FLP in the Nordic countries can be explained by enlargement of government employment (Esping-Andersen, 1996). Also, those who work in the public sector usually face least difficulties to balance paid work and domestic work (OECD, 2001, p.134).

Another problem of the dual-earner solution is the potential influence for income gap between households. As McCall and Percheski (2010) point out, female participation in the labor force can lead to larger inter-household income gap through homogamy. That is, if men with high income and women with also high income get together, their household income will be much bigger than couples with lower earning potentials. Schwartz (2010) argues that the increase in the income gap in the United States would be substantially smaller if the change in the pattern of association was absent ²⁾.

Increase in the inter-household income gap is an unintended consequence of the female labor participation and family support programs. A practical counter policy against this result would be income transfer from richer household to less richer ones. The corresponding tax program is joint taxation, which variant can be practiced in part of the OECD member countries, such as France (O’Donoghue and Sutherland, 1999). This, however, can work as a disincentive to work for members with smaller income in a household.

4 Discussion

Most East Asian societies are facing population issue, which is the decreasing birthrate. A plausible solution would be the dual-earner couple society, where the income effect by female employment boosts couple formation and childbirth. This paper, although with limited data and yet-

to-be-improved estimation model, suggests that female participation in the labor force has positive effect on birthrate.

At the same time, we have to aware the conditions and possible consequences of the dual-earner society. In order for a man and woman who live in a single household to work full-time, redistribution of domestic unpaid work in the household is not enough. The society as a whole has to redistribute labor force for care, while crossing the line between paid and unpaid work.

There are mainly two patterns of grand scale redistribution of care work. One is the substantial domestic income gap as seen in the part of English-speaking countries. Low income groups, especially female foreign workers, provide care work through private labor market. The other is public provision of care work, accompanied by large government spending and gender occupational segregation. It might be difficult for most East-Asian societies to follow either pattern.

One of the serious consequences of dual-earner society is the possibility of increasing income gap. Family-friendly programs may free a group of women from economically dependent position, but it can promote assortative mating because, with a effective FF programs, a man with high income no longer has to count on unpaid domestic work by his spouse. In order to address this problem, income redistribution among household has to reinforced by joint taxation, but there is still a trade-off between the effectiveness of tax programs regarding the income gap reduction and promotion of employment of married (or cohabited) women.

A future policy or program concerning household formation and childbirth in East Asian societies has to bring these issues discussed in this paper into view.

[Note]

- 1) OECD (2002, p.132) points out that favorable indicator of birthrate is the CFR (completed fertility rate), which is the average number of births born to certain cohorts, for TFR is sensitive to the period effect and unreliable measure to capture the fertility trend. In this study, however, we choose TFR because it can be a more direct result of surrounding factors, such as male unemployment.
- 2) See Breen and Andersen (2012) and Shin and Kong (2015) for the cases of Denmark and Korea, respectively. The current situation about the family income gap in Japan is addressed in Tsutsui (2015).

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