

**A Comment on “Intercultural Marriage and Its Impact on Fertility in Taiwan”
by Yu-Hua Chen**

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It is my great pleasure and honor to comment on paper entitled “Intercultural Marriage and Its Impact on Fertility in Taiwan,” by Professor Yu-Hua Chen. This paper is very much intriguing. The paper thoroughly describes the recent situation and changes on styles and attitudes of Taiwanese toward marriage, which provides fruitful thoughts for the problem of declining fertility rate in Taiwan. The paper also focuses on intercultural marriages and tries to discuss its effect on the problem the country faces. In the following, I first briefly overview the contents of her paper and then move on to discuss some comment.

Professor Chen’s paper consists of two parts. As mentioned above, the first half mainly describes major changes in marital behaviors and attitudes among Taiwanese. The second half focuses on intercultural marriages which have brought a wide attention within the country in these days.

The main messages in the first half are; (1) nowadays, there are growing number of Taiwanese women to enroll in higher education; (2) and therefore, the educational level of married couples has become very much equivalent (the phenomenon is called “educational homogamy” in the paper); (3) as a consequences, the average age of brides has become older, that may have led the low fertility rate of the country; (4) at the same time, there is a growing number of women who remain as single, and that may have also led the low fertility rate; (5) as a side effect of females’ higher education enrolment, males whose educational background remain relatively low are having hard time finding their partners. But when there is a demand, there is a supply. As a consequence, the paper describes that (6) many of those men import brides from neighbor countries instead of getting one from their own.

Given these recent phenomena, the paper moves to discuss the second half. The second half of the paper analyzes the reproductive behavior among intercultural marriages using micro-data surveyed on foreign spouses in Taiwan. One of the main motivations of the Professor Chen’s paper is (if I understand her intentions correctly); (a) “to compare reproductive outcomes between Taiwanese and Non-Taiwanese women” (excerpted from p.1), and (b) tries to verify whether the popular saying that “foreign brides breed like rabbits” (excerpted from p.16) is scientifically true or not. If

these could be verified, one could discuss that there might be a possibility of those foreign brides to be a panacea or at least a buffer against the rapid fertility decline in Taiwan (of course, this may also cause a negative side-effect which the author briefly concerned about in the last part of her paper).

Based on these motivations, the second half of the paper is dedicated to a quantitative analysis which tries to describe the reproductive behavior of intercultural marriages. Specifically, the paper estimates the logistic regression using the survey data for those foreign brides, and obtained the following major findings. By other factors being equal, (1) Southeast Asian wives bear more children than mainland Chinese wives; (2) mainland Chinese wives are more likely to be childless. Furthermore, the analysis moves on to calculate the sex ratios of the babies by wives' nationalities. The finding tells us that; (3) the sex ratio is about 1.10 for Taiwan, which suggests a strong traditional preference for son in the country; (4) and this tendency is even stronger among foreign wives.

My comments are three. My first comment is related to the paper's main motivation I have just described above, which is to verify the validity of the popular saying about the "foreign brides breed like rabbits." Although the analysis is very much interesting, I am not exactly convinced whether this motivation has been fully accomplished in the analysis. It seems that the data used in the analysis limits only to the behaviors of Southeast Asian and Mainland Chinese wives. As I assume the popular "rabbits" saying is probably a comparison between the national Taiwanese wives and the foreign wives, to verify that saying, it would be better to compare between Taiwanese wives reproduction and others. If there is any similar data for Taiwanese wives, pooling those data together and conduct similar analysis would be more direct way to induce a strong message of the paper.

My second comment is the interpretation of the results obtained in the logistic regression. Specifically, I wonder what the "SE Asian origin/ Mainlander" variable in the regression in Table 8 actually reflects for. For each variable in the regression, there shall be some kind of economic explanation. For example, since the educational level is highly and positively correlated to wage, the education dummy captures how high one's shadow price of leisure is, and therefore that may directly influence a decision to bear a child. Another example is husband's employment status, which will also reflect the reservation income for wife, so that would also influence reproduction behavior. Given these interpretations, I wonder what the "SE Asian origin/ Mainlander" variable stands for. Does the variable reflect biological ability for the certain nationality to bear more children? Or does it stand for either cultural, historical, or religious background

that may influence the reproduction behavior, such as contraception is banned by certain religion? I would suggest that the clarification of this variable would enrich the entire discussion of the paper.

Lastly, my third comment is about the sex ratio mentioned in the last part of the paper. According to the paper's calculation, Taiwan's sex ratio at birth is around 1.10 and the paper therefore concludes that there shall be a strong preference for son to daughters in Taiwan. When I read this part, I recalled the statistics lecture I took old back in my undergraduate studies, when my teacher taught me that sex ratio at birth is by nature, slightly above 1, and this phenomenon has been statistically verified universally. In other words, by nature, the number of baby boys is larger than that of baby girls. I remember that this was first discovered by Arbuthnott in the early 18th century, what he calls the phenomenon "Divine Providence" (Arbuthnott [1712]).

To recheck this point, I calculated Japan's sex ratio at birth from 1900 to recent, and found that Arbuthnott's conjecture right; the sex ratio at birth for Japan has been stably above 1 for all hundred years, and the average is about 1.06 (see figure 1). I also found that the ratio for the United States also fluctuates around 1.05. Therefore, taking into account of these values, I assume the ratio for Taiwan is indeed, slightly higher.

Though, when I plot this figure, I found another interesting fact. That is, this ratio had an upward trend up until the early 1970s, it peaked out, and since then, is having a declining trend until recent. Very interestingly, according to an US report (Mathews and Hamilton [2005]), I found similar trends could be observed in the United States as well. My main motivation here is not to identify what is behind these changing trends. I thought it may be interesting, however, to look at the ratio for Taiwan in a longer span, to check whether any kind of trends or variations could be observed from the data. Since the first half of this paper describes that there are major and various changes in people's life styles in Taiwan in the second half of the 20th century (including people's way of thinking toward life), the ratio may have been affected somewhat.

Furthermore, the paper's argument moves on to discuss that the sex ratios at birth for Southeastern and mainlander mothers are much higher than that of Taiwanese mothers and thus, there is even a stronger preference to boy among intercultural married couples. Indeed, the ratio of 1.2 is very high. Before rushing into the conclusion, however, I would suggest to compare the ratio in same bases, that is, to calculate not the total sex ratio, but the sex ratio of the 1st birth for Taiwanese mother and compare with those of Southeastern and mainlander mothers.

Related to this discussion, I recommend another indirect but useful and also easy way to identify son-preferences among foreign mothers. That is, to add “first-child is daughter” dummy to the logistic regression in the “more than two children model” in Table 8 in the paper. If this dummy is found to be positively significant, that indirectly implies that the couples prefer son. Although the caveat is that this only applies to those who have more than two children, it might be worth testing to support the paper’s implication.

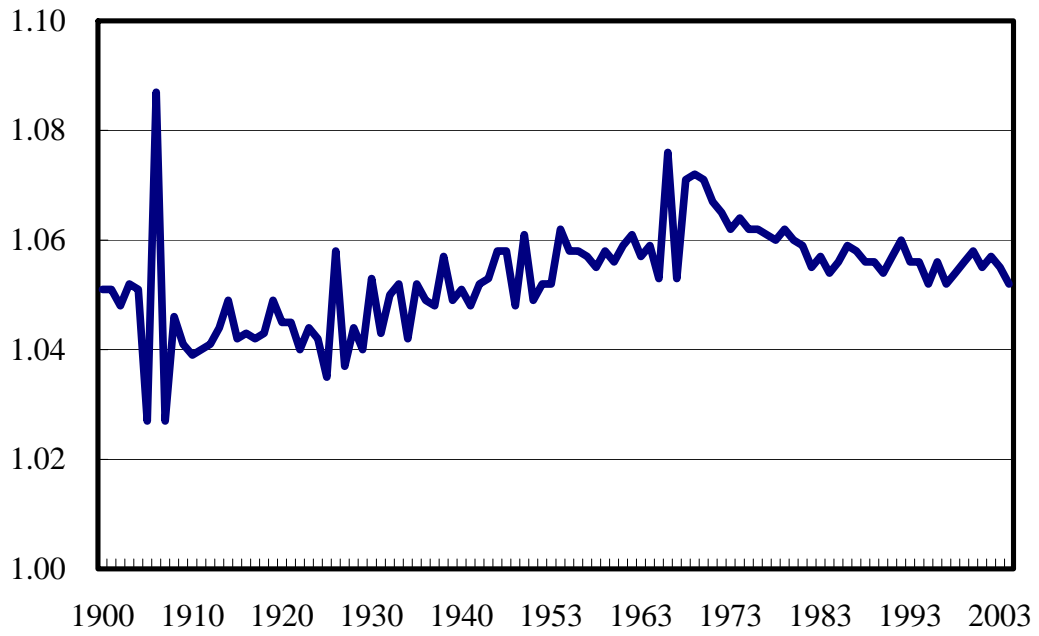
Once again, it was my great honor to discuss this interesting paper. Thank you.

References

Arubuthnott, J., *An Argument for Divine Providence*, 1712.

Mathews, T. J., and B. E. Hamilton, “Trend Analysis of the Sex Ratio at Birth in the United States,” *National Vital Statistics Reports*, 53(20), U.S. Department of Health and Human Services, 2005.

Figure 1 The Sex Ratio at Birth in Japan



Source: Ministry of Health, Labour and Welfare, Japan