Comparison of Male Marital Wage Premium across generations (US) and Countries (US/China/Taiwan)

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"Male marital wage premium" (MWP), a well-known phenomenon, refers to the fact that married men earn more money than unmarried ones. However, the effect of marriage on male wage is still uncertain since the phenomenon is possible due to the attractiveness of high earnings and high earning potential males in the marriage market (i.e., selection bias). Past researchers mainly applied two methods to exclude the effect of selection. The first utilizes fixed effect regression, benefiting from the advantages of panel data to control individual wage differences and wage growth differences. For example, Ludwig and Brüderl (2018) use the National Longitudinal Survey of Youth in the US and show no male marital wage premium after excluding the effect of selection. Their paper challenges past results by analyzing the difference between their model allowing individual wage growth heterogeneity and models with homogeneous wage growth. The second method adopts the treatment effect model with cross-sectional data. For instance, Nakosteen and Zimmer (1987) use the Michigan Panel Survey of Income Dynamic to show no male marital wage premium after excluding the effect of selection.

Despite no evidence of marriage effect in the papers mentioned above, many studies that use similar methods on different datasets covering different countries still find the existence of the "male marital wage premium." In this paper, we apply the two approaches (i.e., fixed effect and treatment effect) to the samples from panel data and cross-sectional data, respectively[1]. Overall, our first potential contribution is demonstrating the existence of "real male marital wage premium" across generations in the US and across countries. Second, if both methods can effectively rule out the selection issue, they should produce similar results for a given time and space. Lastly, if the fixed effect model does not overperform the treatment effect one, scholars could feel at ease when replicating MWP with more attainable cross-sectional data.

Explanations for the male marital wage premium

The existence and the causal mechanism of male marital wage premium remain an active debate for social scientists. Three main theories, market specialization[2], effort allocation[3], and employer bias[4], support the causal effect of marriage on male wage. The first claims that marriage allows husbands to invest more in market-specific skills, assuming the wives take care of the housework. The second mechanism, effort allocation, follows similar logic by saying that married men can devote more time to work. The last theory asserts that the employer could view married men as more productive or the breadwinners as more deserving of financial support than unmarried ones. Despite some empirical evidence of the three theories, potential selection into marriage may bias the results. Past attempts to rule out selection issues use either the treatment effect method (for cross-sectional data) or the fixed-effect method (for panel data)[5]. Ideally, the two methods should yield the same conclusion about the existence of causal MWP.

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[1] It should be noted that we use the last year of the panel data as our cross-sectional data.
[2] Kenny (1983); Chun and Lee (2001)
[3] Becker (1985); Hersch and Stratton (2000); Stratton (2002)
[4] Siebert and Sloane (1981); Waite and Gallagher (2000); Grossbard-Shechtman and Neuman (2003)
[5] Nakosteen and Zimmer (1987); Ludwig and Brüderl (2018)

Research Design

To evaluate MWP across time and space, we gather data from US National Longitudinal Survey (NLS), China Family Panel Studies (CFPS), and Taiwan Panel Study of Family Dynamics (PSFD). All of them are national representative panel data with overlap between their time frame (2010 -2016). Table 1 provides a summary of the data:

Table 1. Data summary

Data	Sample	Type	Time frame
US National Longitudinal Survey	National	Panel data	1997 (Round 1) – 2019 (Round 19)
China Family Panel Studies	National	Panel data	2010 - 2020
Taiwan Panel Study of Family Dynamics	National	Panel data	2004 - 2016

Regarding identification strategy, we utilize the fixed effect and treatment effect models to identify our variable of interest: male wage premium. For the fixed effect model, our estimation is implemented at the individual-year level since we have annual observations of individual wages. Equation 1 describes the model of choice:

Equation 1: Fixed effect model

$$\ln w_{it} = \alpha_{2i} exp_{it} + \beta m_{it} + \gamma X_{it} + \alpha_{1i} + \epsilon_{it}$$

Where $\ln w_{it}$ denotes the outcome of interest: the natural log of person i's wage at time t. exp_{it} is labor market experience, and X_{it} are the control variables. The key variable used for identification in our regression is the marriage dummy, m_{it}, such that $m_{it} = 1$ for a married person. The wage level α_{1i} is an individual-specific constant, as well as α_{2i}.

The treatment effect model follows Heckman's (1979) and Nakosteen and Zimmer (1987) proposed method to tackle selection bias. We first consider the marriage equation (Equation 2) and wage equations (Equation 3) separately (i.e., treat marriage as an endogenous variable) . Afterward, we estimate the combination of the two models, normalize the combined equation, and calculate the Inverse Mills Ratio for every individual[6]. Finally, we put the ratio as a right-hand-side variable along with marital status and other controls in the wage equation. Equation 4 illustrates the model for estimation:

Equation 2, 3:

$$m^*_i = c + \lambda lnw_i + \theta Y_i + u^*_i$$
$$lnw_i = \alpha + \beta m_i + \gamma X_i + \epsilon_i$$

Equation 4: Treatment effect model

$$lnw_i = \alpha + \beta m_i + \eta MR_i + \gamma X_i + \epsilon_i$$

Where m_i is the dummy for marital status, MR is the Mills Ratio, Y_i , X_i are the control variables.

[6] The Inverse Mills Ratio: $MR_i = m_i * \widehat{s_i} - (1 - m_i) * \widehat{s_i} * \frac{\widehat{\Phi_i}}{1-\widehat{\Phi_i}}$

Schedule

April 2 – April 9: Review methods and models, and clean the data (US, China, Taiwan) for estimation
April 10 – April 16: Clean the data and produce preliminary results
April 16 – April 22: Produce results and graphs
April 23 – April 30: Write the paper

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