Changing Within-couple Earnings Association and Trends in Earnings Inequality among Married Couples in Urban China: 1988-2013[1]

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Abstract

Using data from China Household Income Project (CHIP), this paper introduces a new decomposition approach to examine how changes in the earnings resemblance of spouses are related to trends in overall earnings inequality among married couples in urban China from 1988 to 2013. Nonparametric rank correlation is used to measure the changing within-couple earnings association. I find that the impacts on inequality trends of various parts of the changing within-couple earnings association are highly unequal and tend to offset one another. As a result, its overall impact is weak. Over time there are more equal-earner families among high-earning women, and more top-earning husbands have non-earning wives. The former increases while the latter decreases earnings inequality. These opposing trends have obscured the important role that the changing within-couple earnings association plays in shaping the trends in earnings inequality among married couples in urban China.

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The economic resemblance between husbands and wives has dramatically risen in the past few decades in many countries. Such a high prevalence of socioeconomic homogamy has long been thought of as an important driver behind the growing trends in income inequality across families (Fernández and Rogerson 2001; Schwartz and Mare 2005). If high-earners are only partnered with high-earners and low-earners only with low-earners, the original income advantage of the high-earners will be enhanced. However, the empirical evidence is largely mixed and has recently lent more support for a negative answer: even if husbands' and wives' earnings are becoming more similar, it plays a small role in accounting for the rising trends in family income inequality. Sometimes it is even found to reduce rather than exacerbate inequality (i.e. be equalizing rather than disequalizing). For example, the increased similarity between husbands' and wives' incomes is found to contribute little to the observed increase in income inequality among households in the United States, United Kingdom, Denmark, Italy, and Germany (Cancian and Reed 1998; Grotti and Scherer 2016; Hryshko, Juhn, and McCue 2017; Larrimore 2014; Pencavel 2006). Similarly small and sometimes equalizing impact on inequality trends of changes in marital sorting by other dimensions such as education and age is also documented in the United States, Europe, and urban China (Boertien and Permanyer 2017; Breen and Salazar 2011; Eika, Mogstad, and Zafar 2018; Feng and Tang 2018; Hu and Qian 2015; Western, Percheski, and Bloome 2008).

Existing literature largely ignores the complex structure of the earnings resemblance of spouses. Most studies use a single summary measure such as the Pearson's coefficient of correlation to measure the within-couple earnings association (Cancian and Reed 1998; Hyslop 2001; Ku et al. 2018). As will be shown in this paper, such single summary measurement often fails to account for the complex relationship between changes in different parts of the within-couple earnings association and their heterogeneous impacts on trends in overall family inequality. Schwartz (2010)

innovatively used log-linear models to identify the separate contributions to inequality trends of the changing within-couple earnings association among dual-earner and single-earner couples, but dual- or single-earner families are still broad categories of their own. In light of the increasing diversity of dual-earner families and the heterogeneity of its implications on gender and family inequality (Raley, Mattingly, and Bianchi 2006; Schwartz and Gonalons-Pons 2016), some substantively interesting questions remain unanswered: how the earnings resemblance of spouses have changed over time among husbands and wives with high-, middle- and low-earnings? Do the changes at different levels of earnings differ between gender? How do they affect trends in overall inequality (in different ways)? Drawing on the recently developed subgroup decomposition methods of inequality measures (Liao 2019), in this paper I propose a new decomposition approach that improves upon existing approaches. The new approach is rooted in the inherent connection between inequality measures and the earnings sorting within couples. Using this new approach, I reveal that even within dual- and single-earner couples the changing within-couple earnings association still contribute to the trends in overall inequality between couples in a highly unequal manner. The new approach can also be used in future research on educational assortative mating and income inequality (Breen and Salazar 2011).

China now shares more than 20% of the world's GDP and is also ranked as one of the most unequal societies in the world, with its level of family income inequality surpassing that of the United States around 2010 (Xie and Zhou 2014). In particular, with the large-scale urbanization and marketization, the earnings inequality in urban China has also witnessed substantial growth in the past three decades (Zhou 2014). However, little is known about how the changing family and marriage behaviors may have played a role in the fast-increasing household earnings inequality in urban China (Xie and Zhou 2014). Contrary to the growing economic activity among women in the

United States and many European countries, women's labor force participation in urban China decreased from 90% in 1990 to 63% in 2013, and the decline is more significant among wives of richer husbands since 2000 (Song, Sicular, and Gustafsson 2016; Wu and Zhou 2015). In recent years there has also been a growing number of status-exchange marriages that consist of older yet more economically established husbands and less-educated younger wives (Mu and Xie 2014; Qian and Qian 2014).In this sense, interestingly, the economic resemblance of spouses in urban China may have witnessed a trend that happens to be opposite to the American and European experiences where the labor market situation of wives of richer husbands improves more rapidly than wives with poorer husbands (Esping-Andersen 2007). While existing literature is dominated by studies within the American and European contexts, this paper contributes to the literature by bringing the interesting and unique context of urban China into the discussion.

The key intuition underlying most studies on the relationship between marriage patterns and inequality can be framed as a tradeoff between within-couple equality and between-couple equality: "As spouses become more economically similar, inequality among married couples may rise as marriages are increasingly likely to consist of two high- or two low-earning partners" (Schwartz 2010:1525). This conventional wisdom has long been used as the key motivation behind many demographic and sociological studies of household earnings inequality (Esping-Andersen 2007; Lam 1997; McCall and Percheski 2010). It is under such a theoretical context that the recent empirical findings of a weak and sometimes equalizing impact becomes puzzling (Grotti and Scherer 2016).

What is often neglected by previous research, however, is the fact that earnings sorting through marriage and family behaviors happens under the context of gender earnings inequality. Using household income survey data from the China Household Income Project (CHIP) that covers 25 years from 1988 to 2013, I show that over time

high-earning women are more likely to have a husband with similar earnings in absolute dollars (i.e. equal-earner couples). This means the correlation between spouses' earnings, **in absolute terms**, strengthened over time among high-earners. However, such a trend among high-earning women necessarily implies that their husbands' earnings are increasingly similar to the top-earners' among women but are also diverging from the top-earners' among men due to the gender earnings gap. "Real" top-earners among men turn out to be increasingly likely to have wives with no earnings. This means the correlation between spouses' earnings, **in relative terms**, declined over time among high-earners. As a result, the overall between-couple earnings inequality is alleviated by the increasing spousal earnings similarity in absolute terms, because the latter also means decreasing spousal earnings similarity in relative terms. Bringing back the context of gender earnings gap, I show that improving gender earnings equality within couples can go hand in hand with increasing earnings equality between couples.

Measurement

Annual earnings are defined as the sum of earned labor income (including salaries, non-wage compensation and non-monetary benefits) and the net income of self-employment minus income tax. This definition has been consistently adopted by previous research on similar topics under the same context of urban China (Ding, Dong, and Li 2009; Hu and Qian 2015). Those who have never worked for pay in the past calendar year are treated as having zero earnings. Those who reported valid work experience in the past calendar year but also reported zero annual earnings are treated as missing on earnings and simply dropped from the sample as the share of such cases is very small[3]. Income from self-employment is included in the definition of earnings because exclusion of it would miss a

[3] Number of such cases ("invalid zero earnings"): 6 in 1988, 150 in 1995, 89 in 2002, 32 in 2013.

key aspect of the contextual feature of urban China. The period under study (1988-2013) covers the important historical period of urban China's marketization. The rise of self-employment and private entrepreneurship constitutes a core component in China's economic transition from planned to market economy, and therefore plays an important role in economic stratification during this period (Wu 2006; Wu and Xie 2003). People with zero earnings are included in the sample to reflect the changing relationship between wives' assortative labor force participation according to their husbands' earnings level. Such a particular component has been found to play a non-negligible role in shaping the overall trends in couple earnings inequality in the United States and Germany (Gonalons-Pons and Schwartz 2017; Pestel 2014; Schwartz 2010). It may also have a significant impact in urban China as mentioned previously.

Earnings inequality across married couples is measured by the Theil index (also known as Theil's T). As one of the most popular inequality measure, the Theil index has been widely used in the sociological and economic literature of income inequality, primarily due to its additive decomposability (Berry, Bourguignon, and Morrison 1983; Breen and Salazar 2011; Firebaugh and Goesling 2004; Weeden 2002). It is also thought to be a more suitable measure for income inequality than the coefficient of variation (CV) or Gini coefficient because the Theil index better reflects the diminishing utility of income (Allison 1978; Schwartz and Winship 1980). In sensitivity analysis not shown here, I perform the analysis using half the squared coefficient of variation (i.e. Generalized Entropy Index (2)) and the findings do not change.

Results

Table 1 Descriptive Statistics

	1988	1995	2002	2013

Theil		0.09	0.12	0.23	0.24
Pearson's correlation coefficient	All couples	0.34	0.47	0.42	0.23
	Dual-earner couples	0.51	0.49	0.50	0.54
% Labor Force Participation	Husbands	97.99	97.79	91.72	95.93
	Wives	91.34	92.57	76.32	78.30
% Dual-earner couples		90.17	91.41	71.78	76.09
% Working wives of husbands with earnings in	bottom 10%	86.86	84.88	57.91	64.62
	top 10%	92.22	89.86	81.82	76.55

Data source: China Household Income Project

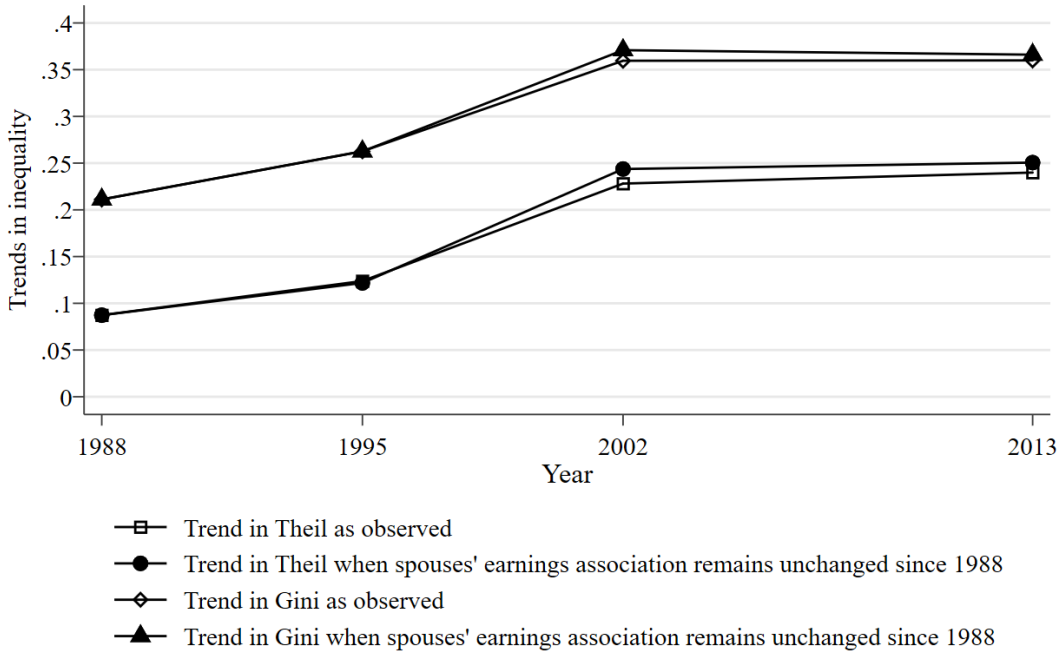

Figure 1 Observed and simulated trends in level of inequality among married couples in urban China from 1988 to 2013 (measured by Theil index and Gini coefficient). Simulated trends refer to trends simulated under the counterfactual that within-couple earnings correlation remains unchanged since 1988.

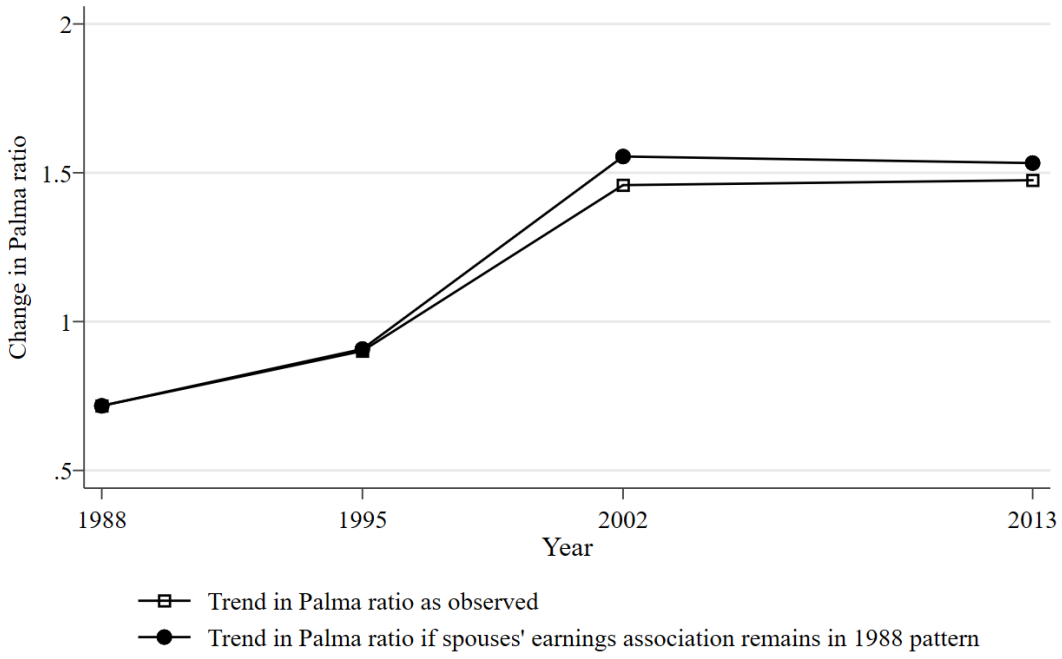

Figure 2 Observed and simulated trends in level of inequality among married couples in urban China from 1988 to 2013 as measured by the Palma Ratio. Simulated trends refer to trends simulated under the counterfactual that within-couple earnings correlation remains unchanged since 1988.

Figure 3 Proportional contribution of changes in different parts of within-couple earnings association to trends in between-couple earnings inequality.

Husbands' and wives' earnings are divided into six categories and cross-tabulated (one category for zero-earners and five categories for each earnings quintile for those with positive annual earnings). All couples are thus divided into 6 x 6 = 36 couple groups. Numbers shown below each bar represent the percentage of the observed increase in couple earnings inequality between 1988 and 2013 that is accounted for by changes in within-couple earnings association concerning that couple group as defined in terms of husbands' and wives' earnings categories. Negative values represent equalizing impact (couple earnings inequality would increase faster in the absence of changes in within-couple earnings association concerning that couple group).