H i C N Households in Conflict Network

The Institute of Development Studies - at the University of Sussex - Falmer - Brighton - BN1 9RE
www.hicn.org

The Unintended Long-term Consequences of Mao's Mass Send-Down Movement: Marriage, Social Network, and Happiness

Shun Wang and Weina Zhou*

HiCN Working Paper 213

April 2016

Abstract:
This paper uses the China General Social Survey (CGSS) 2003 to evaluate the long-term consequences of a forced migration, the state's "send-down" movement (*shang shan xia xiang*, or *up to the mountains, down to the villages*) during the Chinese Cultural Revolution, on individuals' nonmaterial well-being. The send-down program resettled over 16 million urban youths to the countryside to carry out hard manual labor over the years 1968-1978. Most of them were allowed to return to urban areas when the Cultural Revolution ended. We find that those who had the send-down experience have worse marriage outcome, lower-quality social network, and lower level of happiness than their non-send-down counterparts. The negative effects of the forced migration are robust against a detailed set of family backgrounds and personal characteristics.

Keywords: Send-down movement, Forced migration, Marriage, Social network, Happiness

JEL Codes: I31, J12, J18, J61

* Shun Wang, Korea Development Institute (KDI) School of Public Policy and Management, 263 Nansojeong-ro, Sejong, Korea (swang@kdis.ac.kr, +82-44-550-1109)

Weina Zhou, Department of Economics, Dalhousie University, 6214 University Avenue, Halifax, NS, Canada (weina.zhou@dal.ca, +1-902-494-6999)

1. Introduction

The send-down movement during China's Cultural Revolution forced more than 16 million adolescents (most 16-19 years of age) to move away from their families to the countryside to live and work with peasants in poverty under harsh political/mobility control (1968-1978).[1] These rusticated youth (*zhi qing, or zhi shi qing nian*) stayed in the countryside from one to as many as ten years. Most managed to move back to urban areas after the central government ended the movement in 1978. Life in the countryside was obviously a big challenge to the rusticated youth, as evidenced by two sociologists who have personal experience, "To many urban youth, including us, the send-down episode remains among the most difficult experiences in our lives—we suffered from removal from our families, an unfamiliar environment, harsh physical labor, and so on" (Chen and Cheng, 1999, p. 37).

Though the life in poor rural areas was extremely hard for the rusticated youth (Zhou, 2004), some recent studies indicate that this negative life event may have no long-term negative impact (Xie et al., 2008), and may even have some positive economic consequences. Zhou and Hou (1999) find a higher proportion of rusticated youth entering college and the workforce as cadres in government, both of which enjoy a high social status in China. Li et al. (2010) find that the send-down years had a positive effect on income through running fixed-effects estimates with twin data. Zhou (2013) also finds a significant and positive effect of rustication on youth's education.

Despite the evidence of rustication's positive impacts on a few measures of material well-being, whether there is a long-term effect on one's nonmaterial well-being measures is relatively unknown. Only one paper studies the long-run impact on one's nonmaterial aspect of life, e.g. values and beliefs (Gong et al., 2014). In this paper we aim to fill in the literature gap, by studying the impacts on three important groups of nonmaterial well-being measures: marriage outcome, social network and self-reported happiness.

We mainly use the China General Social Survey (CGSS) 2003 for this study. Utilizing a detailed set of variables of parents' characteristics when respondents were 18 years old in the CGSS data, we compare sent-down individuals to non-sent-down individuals who shared similar characteristics, such as birth cohort, education level and family background during the send-down movement.

[1] The send-down movement started as early as in 1960. However, the numbers of individuals were sent down before 1968 was small. The massive send-down movement started in 1968.

When the send-downs returned to urban areas, they had already reached on average more than 22 years old. While most young men and women in urban areas already started searching for partners at this age, the sent-down youth just returned to urban or were struggling to adjust to their life after returning. Given that marriage is a "must-do" event in China in 1980s, were send-downs able to find a quality match under the time and financial constrains? We find that both female and male send-downs married 1.2 years later than the non-send-downs. In addition, despite the fact that 99% of respondents were ever married, the proportion of send-downs still remains married in 2003 was much lower than the non-send-downs. The late entry into the marriage market may have disabled send-downs to find a high quality match. We further find suggestive evidence of a low quality match of the send-downs: the spouses of the send-downs are less likely to listen to and respond appropriately to their partners' expressions of life stress, and are also less likely to do housework than non-sent-down spouses.

Given the fact that the send-downs were forced to separate from their families and original social network on average five to six years during adolescence,[2] little we know about how such an event could affect individuals' long term formation of their social networks. Using self-reported intimacy of the relationship with relatives and friends as a measure of the density of the social network, we find that the send-down experience had a negative impact on the *density* of their later social networks. Evidence also suggests that the send-down experience also reduced the *size* of their social network: the sent-down individuals greeted with fewer numbers of relatives during the Spring Festival, one of the most important periods that families and relatives gather around in China.

We then turn to analyze the long-term consequences of the send-down experience on individuals' happiness, a more direct and comprehensive measure of one's well-being that embodies both economic and non-economic aspects of life (Helliwell et al., 2012, 2013, 2015; OECD, 2013). The harsh manual labor experience in rural areas was extremely difficult for the sent-down youth who were, on average, only 17 years old and most likely had never been in rural areas prior to being sent-down. However, decades after they returned to urban areas, did the send-downs overcome the transition and become as happy as their non-sent-down counterparts or even happier than them, parallel with the pattern of their material well-being? In contrast to the literature which supports a positive effect of the send-down experience on one's material well-being, we find a negative effect on happiness.

[2] During the send-down period, the sent-down youth were only permitted to return to their relatives and family members once every several years.

To build the robustness of our results, we further impose more restrictions on the samples with respect to family backgrounds which might affect one's chance of being sent down and the length of stay in rural areas (see Section 6 for detail). In addition to the OLS regression, we also use propensity matching method to tackle the potential selection issues. The various robustness checks all yield consistent results.

Our study contributes to several literatures. First, it adds to the debates on the impact of forced migration. The massive send-down movement in China was a large-scale forced migration. The study on the impacts of forced migration is emerging in recent years, however most studies concentrate on a few forced migration situations, such as the internal displacement in Northern Uganda and Colombia, the refugee inflow to Tanzania from Burundi and Rwanda, and the forced migration resulted from WWII.[3] The studies on developing countries are often focused on short- and medium-term impacts, and generally find negative impacts (Bozzoli and Brüg, 2010; Bozzoli et al., 2011; Ibañez and Moya, 2010; Ibañez and Velez, 2008; Kondylis, 2010) or heterogeneous impacts across different groups (Fiala, 2009). Those studies on developed countries, mostly in Europe, mainly focus on the long-run impact of forced migration related with WWII, and often find positive impacts (Saarela and Finnas, 2009; Sarvimäki et al., 2009) or mixed impacts (Bauer et al., 2013; Falck et al., 2011). Second, our study contributes to the study of the impacts of early life environment on later life outcomes (Heckman, 2000; Garces et al., 2002; Gould et al., 2011). The separation from family during adolescence, such as residential/boarding school is especially related to our study (Behaghel et al., 2015; Feir, 2013). Finally, our study is closely related to a large body of literature on happiness adaption to positive and negative life events (Clark et al., 2008; Lyubomirsky, 2011).

The remainder of this paper is organized into the remaining sections. Section 2 provides a brief introduction to the background of Cultural Revolution and the send-down movement in Mao's era in China. Section 3 describes our data. Section 4 explains the identification strategy. Section 5 presents estimates of impacts of send-down on individual's marriage outcome, social network, and happiness. Section 6 conducts various robustness checks. The last section draws conclusions.

2. Background

The send-down policy started in as early as 1960. Only a small number of individuals were

[3] See Ruiz and Vargas-Silva (2013)'s review of literature on forced migration.

persuaded by government or volunteered to go to rural areas in the beginning. The massive send-down policy was initiated by Chairmen Mao in 1968 with his famous speech: "It is necessary for educated young people to go to the countryside to be reeducated by the poor and lower middle class peasants. Cadres and other city people should be persuaded to send their sons and daughters who have finished junior or senior high school, college, or university to the countryside" (Pan, 2002, p. 371).[4] The send-down movement ended in 1978, which was two years after Mao's death. Most of the sent-down youth had returned to urban areas before 1980 (Zhou and Hou, 1999).

The main targets of the send-down policy (1968-1978) were junior and senior high school students in their graduation year.[5] Each local government had a send-down quota to fill each year. The quota varied largely by year and cities (Bernstein, 1977; Zhou, 2013). If the quota was larger than the age-eligible youth in a city, all those youth would be sent down; if the quota was smaller than the age-eligible youth, families who had already sent a proportion of their children would be allowed to keep their current age-eligible children. By the end of 1978, almost every urban family had at least one child being sent down.

The send-down movement was forced and mostly the request was unanticipated. If one refused to go, both the child and their parents could be accused of opposing the great strategy of Chairman Mao (Zhang, 2000; Pan, 2002). The send-down policy in 1968 and 1969 targeted youth graduated from schools during 1966-1969. The total number of youth sent down exceeded 10% of the 1979 non-farm population.[6] Zhou and Hou (1999) suggest that children whose parents had university level education were more likely to be sent down. Li et al. (2010) suggest that well connected families were able to get their sent-down children return to urban earlier.

Sent-down youth were, on average, only 17 years old when they were sent to the countryside. Most of them had never left their parents before and had never experienced life in a rural area. Once they were moved to rural areas, they were forced to work as long as 12 hours a day and 7 days a week (Zhou and Hou, 1999; Bernstein, 1977).

---

[4] There was a small amount of individuals who were sent to rural areas before 1968. However, those individuals volunteered to go to rural areas instead of forced. Because the nature of the volunteering may cause endogeneity in the send-down effect, we only focus on the individuals who were sent down after 1967 in this paper.

[5] Many junior or senior high school students who graduated in 1966 and 1967 were also sent down.

[6] The number is calculated by dividing total number of send-downs during 1960-1978 by total number of non-farm population in 1979.

3. Data

The main data used in this paper is from the 2003 wave of CGSS. The CGSS is part of the East Asian General Social Survey, collected jointly by the Hong Kong University of Science and Technology Survey Research Center and the Sociology Department of People's University of China. It is a nationally representative individual-level survey based on face to face interview, covering 22 provinces, 4 autonomous regions, and 4 province-level municipalities. Tibet, Hong Kong SAR and Macao SAR are not included in the survey. The survey employs a four-stage stratified random sampling scheme. In the first stage, it samples 125 city districts and rural counties from 5 major strata to serves as primary sampling units (PSUs). The 5 strata include: (1) the city districts of three province-level municipalities, Beijing, Shanghai, and Tianjin; [7] (2) the city districts of provincial capital cities; (3) the eastern region excluding those districts included in stratum (1) and (2); (4) the central region excluding those districts included in stratum (1) and (2); (5) the western region excluding those districts included in stratum (1) and (2). In the second stage, 4 secondary sampling units (SSUs), i.e. townships or city sub-districts, are selected in each sampled PSU. Then 2 third sampling units (TSUs), i.e. neighborhood committees (in towns) or villager committees (in countryside), are selected in each sampled SSU. Finally, in each sampled TSU, 10 households are selected. The 2003 survey was conducted in October and November.

We consider three set of dependent variables, marriage outcome, social network, and happiness. Marriage outcome includes the age at first marriage and the marriage status in the survey year 2003. Social network includes the degree of intimacy of relationships and the number of contacts. The CGSS data have a measure of respondents' relationships with both their relatives and friends by asking the question, "How would you evaluate your contact with relatives and friends?" The answer ranges from one to five: 1. "Very unintimate", 2. "Unintimate", 3. "So-so", 4. "Intimate", 5. "Very intimate". We call this variable "Intimacy". The second measure of relationships comes from the number of relatives individuals contacted during the recent China's Spring Festival (Lunar New Year). Spring Festival is one of the most important events in Chinese Culture. It is a tradition that people gather together with their relatives and friends to celebrate this large event. The survey asks the question, "During the celebration of this year's Spring Festival,

[7] Chongqing, though also a municipality under central control, was included in the second rather than this stratum, since it became a municipality much later than other three and was much lower in terms of economic and social development level. See Bian and Li (2012) for more details on sample designs.

between you and your relatives, how many people did you greet each other in various ways?" This variable will capture another important aspect of social network, the size. We call this variable "Relatives". Happiness is an evaluative measure of subjective well-being. It comes from the following question: "Generally speaking, how do you personally feel about your life?" Respondents can choose one of the following five options: 1. "Very unhappy", 2. "Unhappy", 3. "So-so", 4. "Happy", 5. "Very happy".

The set of individual characteristics include gender, age, years of education, years of education before 1978, Communist Party membership, and job type. Family characteristics include household income, housing status, father and mother's background information (including years of education, leadership in government or state-owned/collective firms, Community Party membership, and whether they worked in a private firm). The summary statistics of all the variables from the main data set, the CGSS 2003, are reported in Table 1. In the restricted sample (sample restrictions are explained in Section 4), 22.9% of individuals reported that they were sent down[8].

In addition to the 2003 wave, the CGSS 2006 is also used as a supplementary data source to provide descriptive evidence of marriage quality in Section 5.1. In this wave, the sampled communities are the same as in 2003, but households and respondents in each community are re-selected randomly. Due to the differences in some survey questions compared with the 2003 wave, the CGSS 2006 family survey is not used for our main analysis.

China Family Panel Study (CFPS) 2010 is another supplementary dataset we use in the estimation. This study was conducted by Peking University Institute of Social Science Survey. Similar to the CGSS data, the CFPS 2010 is nationally representative and was collected based on a probabilistic sample and stratified design[9].

4. Research Methodology

To estimate the long-term impacts of the send-down experience, we compare the outcomes of individuals with send-down experience to individuals without send-down experience but had similar characteristics and family backgrounds during the send-down period. The individuals who were sent down were urban junior high and senior high school students and most of them graduated

[8] See Figures 1 and 2 in Zhou (2013) which report distribution of send-downs by year in the same survey.

[9] See Xie and Hu (2014) for more details.

between 1966 and 1978.[10] Therefore, we compare the outcomes of the send-downs to their closest counterpart: individuals who were not sent down but were also high school students graduated between 1966 and 1978 in urban areas. We further restrict samples to individuals born in the period 1945-1965, since they were more likely to be affected by the send-down policy (1968-1978).

In addition, we restrict samples based on individuals' family background. The send-down program discriminated against the group of children whose parents have higher education or worked in private firms. Zhou and Hou (1999) and Zhou (2013) suggest that children whose parents had university-level education were more likely to be sent down because higher education was largely criticized and educated people were likely to be labeled as counter-revolutionist during the Cultural Revolution (1966-1977). Some may wonder whether parents' political status might play a role. It has been well documented that parents' political power was unlikely to prevent their children from being sent down (Xie et al., 2008). Even children of Communist Party members could not avoid being sent down. China's previous chairmen Deng Xiaoping's daughter, China's first Prime Minister Zhou Enlai's nephew and China's current president Xi Jinping were also sent down. In Table 2, we report the family backgrounds of both sent-down and non-sent-down groups and test their differences by using CGSS 2003 data (see Section 3 for a detailed explanation of the data). We find that the proportion of fathers obtaining a college degree or higher is greater for the sent-down group. For this reason, we exclude individuals in both groups whose parents (either father or mother) have more than 12 years of education. Other characteristics and family backgrounds of sent-down groups and non-sent-down groups are very similar and do not statistically differ from each other (See Table 2).

The above sample restrictions allow us to compare the outcome between two very homogenous groups. Both the sent-down group and the non-sent-down group comprise urban-born individuals aged between 40 and 55 in 2003 who had similar levels of education during the Cultural Revolution, and, most importantly, had very similar family backgrounds when they had high risks to be sent down. In the rest of the paper, only the restricted samples are used in the analysis, unless elsewhere specified. We thus run OLS regressions[11] using the following equation:

[10] Note that the send-down policy in 1968-1969 targeted all students graduated during 1966-1969.

[11] We conduct OLS regression even for those categorical dependent variables in our main model, but we perform (ordered) logistic regression as a robustness check later in Section 6.1. Specifically for happiness measure, Ferrer-i-Carbonell and Frijters (2004) show that treating the happiness score as cardinal or ordinal

$$Y_i = \alpha + \beta Senddown_i + X_i\gamma + u_i, \quad (1)$$

where Y_i is the outcome variable. $Senddown_i$ is a dummy variable that equals to 1 if i was sent down during the movement, and 0 otherwise. X_i is a set of covariates including individual characteristics and family background. The error term, u_i, is clustered at the province level to control the potential correlation within province.

People may still have concerns about the identification strategy, that some family characteristics may affect the chance of being sent down and the length of staying in rural area. We deal with the concerns in the robustness check section. First, well-connected families were able to bring their sent-down children back to urban areas earlier (Li et al., 2010), and this could cause endogeneity issue. In the robustness check section (Section 6.1), we drop all send-downs who were able to return to urban areas before the end of the Cultural Revolution. We find the results are consistent with the main findings. Second, we also drop the samples whose parents have specific types of jobs, and find consistent results. Third, one concern in the estimation is that the number of siblings may bias the results since individuals with more siblings would have lower probability of being send-down. We show that the estimation results are essentially the same with or without including number of siblings in the regression. Due to the absence of the sibling information in the CGSS 2003 data, we use CFPS 2010 data to re-estimate the send-down effect on marriage, social network and happiness, which is an even longer term effect. The estimation results are robust and consistent with the findings in the CGSS 2003 data, regardless of controlling for number of siblings. It also suggests that the send-down effect estimated from CGSS 2003 is neither survey specific nor year specific.

Furthermore, instead of restricting samples by family backgrounds, we use propensity score matching method to tackle the potential selection bias arising from observed family backgrounds. Again, we find that the matching estimators are largely consistent with the OLS estimators.

5. Results

5.1. Marriage

Literature has shown that marriage is one of the most important life events that could lead to a happy life (Zimmermann and Easterlin, 2006). For generations born between 1940s and 1960s,

yields similar results.

marriage was a "must-do" event in Chinese culture. All individuals were expected to get married when they reached adulthood, and could face large social pressure from both families and work places if they did not. After the send-downs stayed, on average, 5 to 6 years in rural areas, they already reached more than 22 years old. Most young men and women in urban areas already started searching for partners. How could this late entry into the marriage market caused by the send-down experience affect individual's marriage outcome?

We first look at the statistics of age at first marriage. We find that the sent-down group married significantly later compared with the non-sent-down group. On average, there is a 1.2-year age gap in the timing of first marriage (Panel A of Table 3). This age gap is persistent for both genders: The sent-down females on average married at 25.9 years of age compared with 24.4 years of age of the non-sent-down females, with males married at 27.4 and 26.1 respectively.

We further look at the marriage rate. The percentage of individuals in the sample who ever married is 99% in both the sent-down group and the non-sent-down group, potentially because marriage was a social-norm event in China. However, when we look at the percentage of individuals remain married in the survey year 2003, there are only 91.5% of the sent-down individuals who remain married while that of the non-sent-down group is 94.7%.

The OLS estimation of Equation (1) is presented in Table 4. We report the estimation for the age at first marriage in columns (1)-(3). In the first column, we only control for basic personal characteristics such as age, gender and years of education before 1978. For the sent-down group, "years of education before 1978" equals to years of education before being sent-down. The second column further controls for parents' information including years of education, leadership in government or state-owned/collective enterprises, Communist Party membership, and whether they were employed by a private company. All the control variables included in the second column are pre-treatment variables, which could potentially affect the send-down probability. Including these variables could help to avoid endogeneity problem which maybe potentially caused by selections through these observables (if there is any). Column (3) further adds a detailed set of personal characteristics: total years of education, Communist Party membership, log household income, employment status and a dummy variable indicates whether one owns a house.[12] Columns (4)-(6)

[12] These variables are all post-treatment variables. Including these variables in the regression may introduce biases in estimates (Angrist and Pischke, 2008).

repeat the model specification in columns (1)-(3), but for the second dependent variable, marriage status (in 2003). Province dummies are controlled for in all models.

Given the potential for within-province correlation of the residuals, we cluster all standard errors at province level. There are 28 clusters given that the number of provinces in the data is 28. We further cluster bootstrap the standard errors, which are presented in the square brackets. The cluster bootstrap standard errors are very similar to the clustered standard errors without bootstraping.

From Table 4 we can see send-down has negative impact on the age at first marriage, and the marriage status in 2003, the survey year. The impact is statistically significant at 1% significance level for the age at first marriage, and at 5% level for the marriage status. Moreover, the impact is economically meaningful. The sizes of the send-down effects are big: the send-down experience delayed marriage by 1.2 year (34% of a standard deviation), and lowered the marriage rate in 2003 by over 3% (13% of a standard deviation). The fact that the coefficients of send-down are largely stable across model specifications suggests personal and family characteristics have little to do with the impact of send-down experience.

A plausible explanation to the fact that sent-down individuals married later than non-send-downs could be that they might not have enough time to find, or were capable of finding, a quality match for their marriage. In addition to their later entry into the marriage market, sent-down individuals often had worse financial conditions in the first few years after returning than those non-sent-down individuals who had been working in cities all the time. This reduced their competitiveness in the marriage market. The higher ratio of unmarried among the sent-down individuals in 2003 may also infer a lower quality of marriage for these individuals.

Using CGSS 2006 family survey data, we find some direct evidence that sent-down individuals are likely to have lower quality of marriage than the non-sent-down individuals, as shown in Table 5. The survey asked married couples, "Is your spouse willing to listen to you express your stress or difficulties experienced?" A respondent can choose from seven categories, anchored from 1 "Strongly disagree" to 7 "Strongly agree."[13] We find that sent-down individuals are significantly less likely to agree with this statement compared with non-sent-down individuals

[13] The survey defines 1 as "strongly agree" and 7 as "strongly disagree". In order to interpret the results more intuitively, we reverse the order in the analysis.

(Row 1 in Table 5). We then explored further how frequently a spouse would do housework, specifically, preparing dinner, doing the laundry and cleaning the house. A respondent can choose from the following seven categories: 1 "Never", 2 "About once a year", 3 "Several times a year", 4 "About once a month", 5 "About once a week", 6 "Several times a week," 7 "Almost every day". On average, the spouse of a sent-down individual was significantly less likely to do any of such housework compared with the average spouse of a non-sent-down.[14]

5.2. Social Network

The sent-down youths were separated from their social circles in urban areas, such as their relatives or friends, for five to six years during their adolescence. During the send-down period they were only permitted to return to their relatives and family members once every several years. This long-term interruption with their original social circles during adolescence could have reduced the size of their social network and also affected their relationships with their relatives and friends. We test these predictions in this section.

The descriptive statistics of these two variables by send-down status are reported in Table 3. In panel A we see the average values for the two groups and their difference. It is clear that the sent-down group reports lower intimacy (-0.14), and smaller number of relatives and friends visited in Spring Festival (-2), than the non-sent-down counterparts. In panel B we can see more details about the categorical answers to the intimacy question. Compared with the non-sent-down individuals, higher percentages of sent-down individuals report "Unintimate" (15.89% vs. 10.63%) and "So-so" (38.08% vs 34.93%).

The OLS estimates are reported in Table 6. We repeat the same regression strategies as we did in Table 4. The first three columns report the results for intimacy measure, and the last three for the size of network. The coefficient of send-down dummy is negative and statistically significant at 5% level for all models, except a 10% significance level in column (3). The negative coefficient of the send-down dummy suggests that the send-downs are likely to have less intimate feelings with their

[14] The means reported in Table 5 use the 1 to 7 scale. We also convert respondents' choice to the number of times doing housework per year (we count "several times a year" as six times a year, and "several times a week" as three times a week), and yielded similar results. For example, on average, the spouses of the sent-down group prepared dinner 180 times per year, while this number was 209 times per year for the non-sent-down group, with the difference being statistically significant.

relatives and friends, and maintain a smaller number of contacts in their social network. The coefficients of send-down for intimacy range between -0.11 and -0.13, which means the sent-down group's feeling of intimacy is 3.2~3.8% (dividing the coefficients by the mean of intimacy, 3.461) lower than the non-sent-down group. The coefficient for the size of network infers that the sent-down group has on average 1.6~1.9 fewer relatives in their social network. These results confirm our prediction that the separation from their family during adolescence has long lasting impact on their social network, in terms of both quality and quantity.

5.3. Happiness

In this section we examine the impact of send-down experience on the happiness. From panel B of Table 3, we find that a larger proportion of non-sent-down individuals reported "Happy" or "Very Happy" compared with the sent-down individuals (36.88% vs. 28.04%), and a smaller proportion of non-sent-down individuals report "So-so" or "Unhappy" compared with the sent-down individuals.

We then conduct OLS estimation and present the results in Table 7. It shows that the coefficients on send-down are negative and statistically significant at 5% significance level. The point estimates are between -0.12 and -0.15. These results suggest that the sent-down experience significantly lowers an individual's happiness level. The size of the coefficient is large: to increase an average individual's happiness by this amount needs to almost double his/her income (given that the coefficient of log household income is 0.15), holding other things constant.

In short, we find statistically significant and economically sizable impact of send-down experience on the three noneconomic well-being indicators, marriage, social network, and happiness in this section.

6. Robustness Check

6.1. Least Square Regression Analysis

In this section we still conduct regression analysis, but with an alternative regression method and various sample restrictions. Specifically, we conduct the following robustness checks. (1) Given the nature of the ordered multiple choice answers to the happiness and the intimacy question,

we first use an ordered logit model to re-estimate the effect of send-down movement on happiness as an alternative to the linear regression model. (2) We drop early-return sent-down individuals. Starting from early 1970s, government allowed some sent-down individuals to return to urban areas, mostly because they were accepted by schools, or managed to find jobs in urban areas. Li et al. (2010) and Zhou and Hou (1999) also suggest that well-connected families were able to bring their children back early to urban areas. In order to avoid confounding factors related to the early return such as ability or family connections to bias our results, we drop all sent-down individuals who were able to return to urban areas before the end of the Cultural Revolution. (3) We exclude respondents whose parents (either father or mother) once worked in private firms or owned private firms, since these groups of families were treated as "anti-revolutionist" and were punished during the Cultural Revolution not only limited to the send-down policy. (4) We exclude respondents whose parents (either father or mother) were government officials to control the potential selection bias. Note that the parents' characteristics used in the above criteria are status of parents when respondents were 18 years old, which is an age very close to be exposed to the send-down selection. (5) Finally, we use number of years of send-down instead of the send-down dummy to estimate the send-down effect. Table 8 reports the estimation results of all of these robustness checks (Panels A-E). The results are consistent with our main results.

We next check the concern that our main results may be biased without controlling for the number of siblings. This is because individuals with more siblings would have lower probability of being send-down, and siblings, on the other hand, may have impact on marriage, social network and happiness. The CGSS 2003 data does not contain siblings' information, therefore we use another survey data, CFPS 2010, to address this issue. Using a different survey data also help us to check the robustness of the send-down effect estimated from CGSS 2003.

Variables such as send-down status, marital status and age of first marriage are same in both two data sets, but there are small differences in the survey questions for "Happiness" and "Relatives". CFPS asked "How happy do you feel?" compared with the question in CGSS: "Generally speaking, how do you personally feel about your life?" Both surveys, however, gives respondents the same five-point scale options, where 1 is "very unhappy" and 5 is "very happy". Regarding to the variable "Relatives", both surveys asked "How many relatives did you visited during the Spring Festival", the CGSS seek answers of the number of *persons* respondents visited, while CFPS required respondents to answer number of *households* they visited. Such subtle differences may affect the size of the coefficient, but it would not affect the direction of the send-

down effect. Unfortunately, the intimacy question is not asked in the CFPS data. The summary statistics of variables using CFPS data are reported in Appendix Table 1.The estimation results are presented in Panel F and Panel G of the Table 7, where the regression in panel F does not include variable siblings, while panel G does. The estimation results are consistent with the findings from CGSS data. The sizes of the coefficient are not significantly different to each other in these two panels. One drawback of the CFPS is that it does not have parents' characteristics when respondents were 18 years old, which in contrast we have in CGSS data. However, as suggested by columns 1 and 2 of Tables 4, 6 and 7, including parents' characteristics does not affect estimation results significantly, we therefore conclude that there is less concern about this issue in the CFPS data.

6.2. Propensity Score Matching

We further use propensity score matching method to estimate the effect of send-down. In the OLS regression we drop individuals whose parents had university degree education, and/or parents worked in private sectors to avoid potential selection bias, because the send-down policy discriminated against those people. The most important advantage of using matching method is that it provides a better solution to such selection problem when the selections are based on observables. For this reason, when using propensity matching method, there is no need to drop samples based on individuals' family background.[15]

Probit regression results which are used to estimate the propensity score, are reported in Appendix Table 2. Following the literature such as Dehejia and Wahba (2002) and Heckman et al. (1998), only pre-intervention variables which are not influenced by participation in the send-down program, are included in the regression. These variables include all family background variables, individual's birth year, age, gender and years of education before 1978 (note that for send-downs this variable is defined as years of education before being sent down).

After using probit model to estimate the propensity scores, we plot them for both sent-down group and non-sent-down group to check the common support (Figure 1). We find that there are regions of no overlapping support, and therefore we exclude observations in the non-overlapping

[15] Same as the sample restriction in the OLS, we restrict sample to individuals born 1945-1965 and attended middle school or high school during the Cultural Revolution in the matching estimates, because otherwise individuals would not be send-down (they are unlikely to satisfy the common support assumption.)

region. The propensity score in the common support region lies within the interval [0.029, 0.614].

Both nearest five neighbors and kernel matching method are used. Table 9 presents the estimation results. The two types of estimators from different matching methods are quite similar to each other. The propensity score matching estimators are consistent with the findings in the OLS regressions.

7. Conclusions

Our study adds to the growing literature in economics that seeks to evaluate the impact of forced migration. Generally, the literature has focused on the impacts on those aspects related with material well-being, such as education, employment, and income. However, to examine the impact more completely, it is also necessary to examine the impact on nonmaterial well-being, which is done by looking into the massive send-down movement in China during the 1960s and 1970s in this study.

Contrary to many studies on the send-down movement showing positive impacts on youths' educational attainment and income, we find a significantly negative effect on individual's nonmaterial well-being, measured by marriage outcome, social network, and happiness. Those who had been sent down had more delayed marriages, were more likely to have lower quality of family life, had smaller size of social network and less intimate relationships with friends and relatives, and reported lower happiness score. This paper provides an example of how difficulties individuals experienced during adolescence may leave a long-lasting impact on their state of well-being.

This paper suggests that, besides considering the commonly-used indicators related with employment and income, the nonmaterial aspects of life shall not be ignored when evaluating the effect of forced migration. These results from the send-down experience may also remind policymakers engaging in tragedy relief that the end of experiencing difficulties or disasters is unlikely to be the end of the story. Instead, the difficulties experienced in the past may continue to affect people's life for a very long period through various channels.

References

Bauer, T., S. Braun, and M. Kvasnicka (2013). The economic integration of forced migrants: Evidence for post-war Germany. *Economic Journal*, 123(571), 998–1024.

Angrist, Joshua D. and J. Pischke (2008). *Mostly Harmless Econometrics*: *An Empiricist's Companion*. Princeton University Press.

Behaghel, L., C. de Chaisemartin, and M. Gurgand (2015). Ready for boarding? The effects of a boarding school for disadvantaged students. The Warwick Economics Research Paper Series.

Bernstein, T. (1977). *Up to the Mountains and down to the Villages: The Transfer of Youth from Urban to Rural China*. Yale University Press.

Bian, Y. and L. Li (2012). The Chinese General Social Survey (2003-8): Sample designs and data evaluation. *Chinese Sociological Review*, 45(1), 70–97.

Bozzoli, C. and T. Brück (2010). Child morbidity and camp decongestion in post-war Uganda, Research Working Paper, No. 24, MICROCON.

Bozzoli, C., T. Brück, and T. Muhumuza (2011). Activity choices of internally displaced persons and returnees: Quantitative survey evidence from post-war Northern Uganda. Discussion Papers, No. 1134, DIW Berlin.

Chen, K. and X. Cheng (1999). Comment on Zhou & Hou: A negative life event with positive consequence? *American Sociological Review*, 64(1), 37–40.

Clark, A.E., E. Diener, Y. Georgellis and R.E. Lucas (2008). Lags and leads in life satisfaction: A test of the baseline hypothesis. *Economic Journal*, 118(529), F222-F243.

Dehejia, R.H. and S. Wahba (2002). Propensity score-matching methods for nonexperimental causal studies. *Review of Economics and Statistics*, 84(1), 151-161.

Ferrer-i-Carbonell, A. and P. Frijters (2004). How important is methodology for the estimates of the determinants of happiness? *Economic Journal*, 114(497), 641–659.

Ibañez, A.M. and A. Moya (2010). Vulnerability of victims of civil conflicts: Empirical evidence for the displaced population in Colombia. *World Development*, 38(4), 647–663.

Ibañez, A.M. and C.E. Velez (2008). Civil conflict and forced migration: the micro determinants and welfare losses of displacement in Colombia. *World Development*, 36(4), 659–676.

Falck, O., S. Heblich, and S. Link (2011). The evils of forced migration: Do integration policies alleviate migrants' economic situations? IZA Discussion Paper No. 5829, Institute for the Study of Labor (IZA).

Feir, D. (2013). The long term effects of forcible assimilation policy: The case of Indian boarding schools. No 1301, Department Discussion Papers from Department of Economics, University of Victoria.

Fiala, N. (2009). The consequences of forced displacement in Northern Uganda. Working Paper No. 65, Households in Conflict Network.

Garces, E., D. Thomas, and J. Currie (2002). Longer-term effects of Head Start. *American Economic Review*, 92(4), 999–1012.

Gong, J., Y. Lu, and X. Xie (2014). Rusticated youth: The send-down movement and beliefs. Unpublished manuscript.

Gould, E., V. Lavy, and D. Paserman (2011). Sixty years after the Magic Carpet Ride: The long-run effect of the early childhood environment on social and economic outcomes, *Review of Economic Studies*, 78(3), 938–973.

Heckman, J.J. (2000). Policies to foster human capital. *Research in Economics*, 54(1), 3–56.

Heckman, J.J., H. Ichimura, and P. Todd (1998). Matching as an econometric evaluation estimator. *Review of Economics Studies*, 65(4), 261–294.

Helliwell, J.F., R. Layard and J. Sachs (eds.) (2012). *World Happiness Report*, Commissioned for the United Nations Conference on Happiness on April 2nd, 2012 (mandated by the General Assembly of the United Nations), New York: The Earth Institute, Columbia University.

Helliwell, J.F., R. Layard and J. Sachs (eds.) (2013). *World Happiness Report 2013*, New York: UN Sustainable Development Solutions Network.

Helliwell, J.F., R. Layard and J. Sachs (eds.) (2015). *World Happiness Report 2015*, New York: UN Sustainable Development Solutions Network.

Kondylis, F. (2010). Conflict displacement and labor market outcomes in post-war Bosnia and Herzegovina. *Journal of Development Economics*, 93(2), 235–248.

Li, H., M. Rosenzweig and J. Zhang (2010). Altruism, favoritism, and guilt in the allocation of family resources: Sophie's choice in Mao's mass send-down movement. *Journal of Political*

Economy, 118(1), 1–38.

Lyubomirsky, S. (2011). Hedonic adaption to positive and negative experiences, in Folkman, S. (eds.) *The Oxford Handbook of Stress, Health, and Coping* (Chapter 11, pp. 200–224), Oxford University Press.

OECD (2013). *OECD Guidelines on Measuring Subjective Well-being*, OECD Publishing.

Pan, Y. (2002). An examination of the goals of the rustication program in the People's Republic of China. *Journal of Contemporary China*, 11(31), 361–379.

Ruiz, I., and C. Vargas-Silva (2013). The economics of forced migration. *Journal of Development Studies*, 49(6), 772–784.

Saarela, J. and F. Finnas (2009). Forced migration and mortality in the very long term: Did perestroika affect death rates also in Finland? *Demography*, 46(3), 575–587.

Sarvimäki, M., R. Uusitalo, and M. Jäntti (2009). Long-term effects of forced migration. IZA Discussion Papers No. 4003, Institute for the Study of Labor (IZA).

Xie, Y. and J. Hu (2014). An introduction to the China Family Panel Studies (CFPS). *Chinese Sociological Review*, 47(1), 3–29.

Xie, Y., Y. Jiang, and E. Greenman (2008). Did send-down experience benefit youth? A reevaluation of the social consequences of forced urban-rural migration during China's Cultural Revolution. *Social Science Research*, 37(2), 686–700.

Zhang, X. (2000). *Children of the Cultural Revolution: Family Life and Political Behavior in Mao's China*. Boulder, Colorado: Westview Press.

Zhou, W. (2013). How does a traumatic experience during youth affect later life? The long term impact of the send-down program during the Chinese Cultural Revolution. Unpublished manuscript.

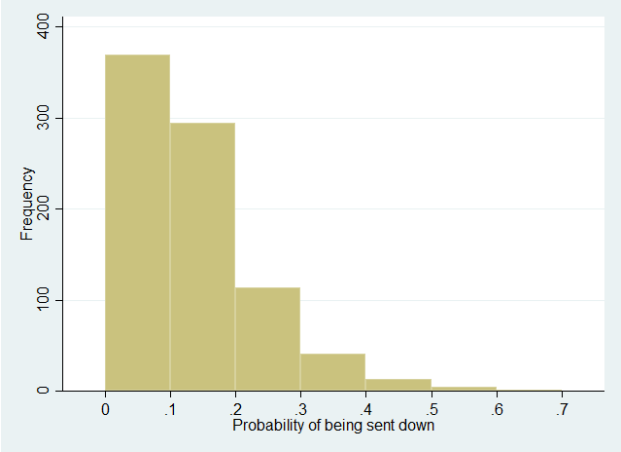
Zhou X. (2004). Children of the Cultural Revolution: The send-down episode, in Zhou, X., *The State and Life Chances in Urban China: Redistribution and Stratification, 1949–1994* (pp. 124–153), Cambridge University Press.

Zhou, X. and L. Hou (1999). Children of the Cultural Revolution: The state and the life course in the People's Republic of China. *American Sociological Review*, 64(1), 12–36.

Zimmermann, A.C. and R.A. Easterlin (2006). Happily ever after? Cohabition, marriage, divorce, and happiness in Germany. *Population and Development Review*, 32(3), 511–528.

Figure 1: Histograms of propensity scores

A. Histogram of propensity score for send-downs



B. Histogram of propensity score for non-send-downs

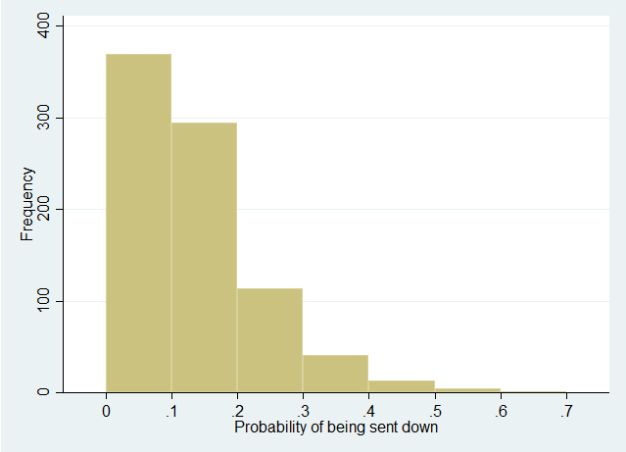


Table 1: Summary statistics

Variable	Obs.	Mean	Std. Dev.
Send-down dummy	1,332	0.229	0.420
Years of being sent down	1,328	1.155	2.508
Female	1,332	0.469	0.499
Age	1,332	47.812	4.925
Total years of education	1,332	10.960	2.035
Years of education before 1978	1,332	10.032	1.426
Communist Party member	1,332	0.265	0.442
Log of household income	1,332	9.487	1.382
House	1,332	0.800	0.400
Full time job	1,332	0.583	0.493
Part time job	1,332	0.102	0.303
Father			
Years of education	1,332	4.716	3.946
Leadership in government or state-owned/collective firms	1,332	0.032	0.177
Party member	1,332	0.269	0.444
Worked in a private firm	1,332	0.028	0.166
Mother			
Years of education	1,332	2.493	3.568
Leadership in government or state-owned/collective firms	1,332	0.004	0.061
Party member	1,332	0.049	0.215
Worked in a private firm	1,332	0.010	0.098
Happiness	1,330	3.242	0.773
Intimacy	1,329	3.461	0.832
Relatives	1,305	13.578	10.998
Married	1,292	0.940	0.237
Age at first marriage	1,289	25.603	3.550

Table 2: Parents' characteristics by send-down experience

Variable	Send-down	Non-send-down	Difference
Father			
Education level			
College or above	0.087	0.045	0.042***
	(0.015)	(0.006)	(0.014)
High school	0.081	0.072	0.009
	(0.015)	(0.008)	(0.016)
Middle school or below	0.75	0.772	-0.024
	(0.024)	(0.013)	(0.026)
Others	0.084	0.11	-0.026
	(0.015)	(0.01)	(0.02)
Leadership in government or state-owned/collective firms	0.045	0.03	0.014
	(0.011)	(0.005)	(0.011)
Party member	0.305	0.271	0.034
	(0.025)	(0.014)	(0.028)
Worked in a private firm	0.028	0.03	-0.012
	(0.007)	(0.005)	(0.01)
Mother			
Education level			
College or above	0.027	0.018	0.009
	(0.009)	(0.004)	(0.009)
High school	0.054	0.037	0.017
	(0.012)	(0.006)	(0.012)
Middle school or below	0.913	0.917	-0.004
	(0.015)	(0.008)	(0.017)
Others	0.006	0.015	-0.009
	(0.004)	(0.004)	(0.007)
Leadership in government or state-owned/collective firms	0.006	0.004	0.002
	(0.004)	(0.002)	(0.004)
Party member	0.072	0.057	0.015
	(0.014)	(0.007)	(0.015)
Worked in a private firm	0.012	0.008	0.004
	(0.006)	(0.003)	(0.006)
Obs.	334	1082	

Table 3: Descriptive statistics of outcome variables by send-down status

A. Mean and differences of outcome variables by send-down status

	Send-down	Non-send-down	Difference
Age of first marriage	26.56	25.35	1.218***
	(0.208)	(0.111)	(0.241)
Married (status in 2003)	0.915	0.947	-0.032*
	(0.017)	(0.007)	(0.016)
Intimacy: How would you evaluate your contact with	3.354	3.492	-0.138**
	(0.049)	(0.026)	(0.054)
Relative: Number of relatives visited in Spring Festival	12.03	14.03	-2.003***
	(0.605)	(0.0351)	(0.723)
Happiness: Generally speaking, how do you personally feel about your life?	3.139	3.273	-0.135***
	(0.044)	(0.024)	(0.05)

Notes: Standard errors are reported in parentheses. * p<0.1, ** p<0.05, *** p<0.01.

B. Intimacy and happiness by categories (percentage of respondents)

	Intimacy					
	1. Very unintimate	2. Unintimate	3. So-so	4. Intimate	5. Very intimate	Obs.
Sent-down	0.66%	15.89%	38.08%	38.08%	7.28%	302
Non-sent-down	0.88%	10.63%	34.93%	45.46%	8.10%	1025
	Chi-squared: 9.34					
	Happiness					
	1. Very unhappy	2. Unhappy	3. So-so	4. Happy	5. Very happy	Obs.
Sent-down	2.31%	13.20%	56.44%	24.42%	3.63%	303
Non-sent-down	1.85%	10.05%	51.22%	32.68%	4.20%	1025
	Chi-squared: 9.00					

Table 4: Impact of the send-down experience on marriage

	Age at first marriage			Married		
	(1)	(2)	(3)	(4)	(5)	(6)
Send-down	1.214***	1.187***	1.173***	-0.034**	-0.036***	-0.033**
	(0.218)	(0.224)	(0.216)	(0.012)	(0.013)	(0.013)
[Cluster bootstrap s.e.]	[0.237]	[0.241]	[0.228]	[0.012]	[0.013]	[0.013]
Female	-1.595***	-1.613***	-1.563***	-0.042***	-0.042***	-0.038**
	(0.219)	(0.220)	(0.236)	(0.013)	(0.013)	(0.016)
Age	0.070***	0.078***	0.111***	0.002	0.002	0.001
	(0.021)	(0.021)	(0.025)	(0.001)	(0.001)	(0.001)
Years of education before 1978	0.094	0.087		0.002	0.001	
	(0.067)	(0.065)		(0.004)	(0.004)	
Father						
Years of education		0.023	0.022		-0.000	-0.001
		(0.028)	(0.029)		(0.003)	(0.003)
Leadership in government		0.727*	0.684*		-0.040	-0.039
state-owned/collective firms		(0.356)	(0.339)		(0.042)	(0.043)
Party member		-0.156	-0.099		0.019	0.013
		(0.235)	(0.238)		(0.015)	(0.015)
Worked in a private firm		-0.218	-0.240		-0.057	-0.054
		(0.828)	(0.826)		(0.052)	(0.052)
Mother						
Years of education		0.022	0.021		0.002	0.003
		(0.037)	(0.036)		(0.002)	(0.002)
Leadership in government		-0.938*	-0.842		0.037	0.045
state-owned/collective firms		(0.503)	(0.532)		(0.029)	(0.037)
Party member		0.471	0.532		0.027	0.027
		(0.609)	(0.616)		(0.021)	(0.019)
Worked in a private firm		-1.039	-0.961		0.019	0.009
		(0.631)	(0.669)		(0.065)	(0.066)
Total years of education			0.097**			-0.004
			(0.045)			(0.005)
Communist Party member			-0.470			0.016
			(0.287)			(0.019)
Log of household income			-0.160***			0.012*
			(0.051)			(0.007)
House			-0.414**			0.048*
			(0.149)			(0.024)
Full time job			0.364			0.015
			(0.257)			(0.021)
Part time job			0.180			-0.015
			(0.377)			(0.023)

Constant	22.340***	21.902***	21.857***	0.891***	0.863***	0.784***
	(1.316)	(1.333)	(1.440)	(0.085)	(0.092)	(0.115)
Province dummy	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1,287	1,287	1,287	1,290	1,290	1,290
Adjusted R-squared	0.178	0.185	0.194	0.051	0.053	0.071

Notes: Standard errors reported in parentheses are adjusted for clustering at the province level. * p<0.1, ** p<0.05, *** p<0.01.

Table 5: Indicators of marriage quality by send-down experience

	Send-down	Non-send-down	Difference
How true: spouse listens to the respondent's troubles (1 "not true at all"; 7 "true")	5.06	5.37	-0.31**
	(0.14)	(0.05)	(0.12)
Frequency of doing housework by spouse			
Cooking dinner	5.19	5.82	-0.63**
	(0.22)	(0.09)	(0.20)
Laundry	4.78	5.21	-0.43*
	(0.23)	(0.23)	(0.24)
Cleaning	5.04	5.48	-0.44*
	(0.23)	(0.10)	(0.22)

Notes: The table reports the estimated mean of variables for the sent-down and the non-sent-down group, and the difference between these two groups from column 1 to 3 respectively. Data are taken from China General Social Survey 2006 Family Survey. Sample size is 403. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table 6: Impact of the send-down experience on social network

	Intimacy			Relative		
	(1)	(2)	(3)	(4)	(5)	(6)
Send-down	-0.116**	-0.128**	-0.109*	-1.598**	-1.879**	-1.673**
	(0.055)	(0.059)	(0.058)	(0.770)	(0.775)	(0.747)
[Cluster bootstrap s.e.]	[0.058]	[0.062]	[0.059]	[0.825]	[0.830]	[0.808]
Female	0.077	0.075	0.128**	0.705	0.626	0.888
	(0.047)	(0.048)	(0.051)	(0.517)	(0.529)	(0.572)
Age	0.004	0.006	0.009**	0.043	0.095	0.054
	(0.004)	(0.005)	(0.004)	(0.065)	(0.069)	(0.063)
Years of education before 1978	0.059***	0.055***		0.271	0.178	
	(0.018)	(0.018)		(0.215)	(0.220)	
Father						
Years of education		0.015**	0.012**		0.200**	0.167*
		(0.006)	(0.006)		(0.091)	(0.091)
Leadership in government		0.235	0.238		-1.524	-1.569
state-owned/collective firms		(0.181)	(0.196)		(1.403)	(1.443)
Party member		0.063	0.036		1.765***	1.493**
		(0.052)	(0.053)		(0.607)	(0.648)
Worked in a private firm		0.163	0.176		-0.026	0.360
		(0.108)	(0.110)		(2.106)	(2.284)
Mother						
Years of education		-0.003	-0.006		0.086	0.085
		(0.009)	(0.010)		(0.120)	(0.129)
Leadership in government		0.418	0.407		3.667	3.266
state-owned/collective firms		(0.412)	(0.387)		(3.952)	(4.369)
Party member		-0.037	-0.045		0.577	0.483
		(0.122)	(0.128)		(1.545)	(1.545)
Worked in a private firm		0.040	-0.020		-0.598	-1.822
		(0.168)	(0.179)		(3.153)	(3.178)
Total years of education			0.044***			0.255
			(0.010)			(0.161)
Communist Party member			0.117**			2.111**
			(0.043)			(0.861)
Log of household income			0.058***			0.408*
			(0.019)			(0.224)
House			-0.022			1.148
			(0.055)			(0.956)
Full time job			0.078			-0.729
			(0.070)			(0.790)
Part time job			0.053			2.113**
			(0.102)			(0.965)

Constant	2.670***	2.520***	1.802***	7.853*	4.538	0.359
	(0.293)	(0.299)	(0.373)	(4.000)	(4.016)	(4.316)
Province dummy	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1,327	1,327	1,327	1,303	1,303	1,303
Number of counties	101	101	101	101	101	101
Adjusted R-squared	0.054	0.066	0.092	0.068	0.084	0.101

Notes: Standard errors reported in parentheses are adjusted for clustering at the province level. * p<0.1, ** p<0.05, *** p<0.01.

Table 7: Impact of the send-down experience on happiness

	Happiness		
	(1)	(2)	(3)
Send-down	-0.125**	-0.146***	-0.119**
	(0.051)	(0.051)	(0.048)
[Cluster bootstrap s.e.]	[0.052]	[0.048]	[0.043]
Female	0.036	0.032	0.104**
	(0.043)	(0.042)	(0.040)
Age	0.013***	0.017***	0.014***
	(0.005)	(0.005)	(0.004)
Years of education before 1978	0.034**	0.025*	
	(0.015)	(0.015)	
Father			
Years of education		0.015**	0.011*
		(0.006)	(0.006)
Leadership in government		-0.052	-0.035
state-owned/collective firms		(0.137)	(0.128)
Party member		0.144***	0.087*
		(0.052)	(0.051)
Worked in a private firm		0.033	0.041
		(0.128)	(0.119)
Mother			
Years of education		0.007	0.004
		(0.006)	(0.006)
Leadership in government		0.517	0.553
state-owned/collective firms		(0.376)	(0.352)
Party member		0.097	0.048
		(0.096)	(0.101)
Worked in a private firm		-0.106	-0.178
		(0.224)	(0.204)
Total years of education			0.013
			(0.013)
Communist Party member			0.199***
			(0.046)
Log of household income			0.149***
			(0.022)
House			0.097*
			(0.058)
Full time job			0.144***
			(0.046)
Part time job			-0.096
			(0.068)

Constant	2.400***	2.137***	0.698**
	(0.308)	(0.312)	(0.349)
Province dummy	Yes	Yes	Yes
Obs.	1,328	1,328	1,328
Number of counties	101	101	101
Adjusted R-squared	0.05	0.081	0.178

Notes: Standard errors reported in parentheses are adjusted for clustering at the province level. * p<0.1, ** p<0.05, *** p<0.01.

Table 8: Robustness checks

	Age at first marriage	Married	Intimacy	Relative	Happiness
	(1)	(2)	(3)	(4)	(5)
Panel A: ordered logit					
Send-down			-0.306**		-0.382***
			(0.135)		(0.134)
Obs.			1,327		1,328
Panel B: early return dropped					
Send-down	1.273***	-0.033**	-0.151**	-1.614*	-0.197***
	(0.323)	(0.014)	(0.068)	(0.871)	(0.052)
Obs.	1,220	1,222	1,242	1,220	1,243
Panel C: parents (either father or mother) worked in private firms or owned private firms dropped					
Send-down	1.169***	-0.040***	-0.124*	-2.025**	-0.148**
	(0.240)	(0.012)	(0.062)	(0.742)	(0.055)
Obs.	1,247	1,248	1,284	1,260	1,285
Panel D: parents (either father or mother) were government officials dropped					
Send-down	1.169***	-0.036**	-0.137*	-1.442	-0.161**
	(0.279)	(0.017)	(0.080)	(0.953)	(0.060)
Obs.	1,222	1,225	1,255	1,232	1,257
Panel E: use years of being sent-down instead of send-down dummy					
Years of being sent-down	0.213***	-0.004	-0.024*	-0.301*	-0.031**
	(0.058)	(0.003)	(0.014)	(0.146)	(0.013)
Obs.	1,283	1,286	1,323	1,299	1,324
Panel F: CFPS 2010, regression *does not control* for number of siblings					
Send-down	1.360***	-0.020		-0.505**	-0.110*
	(0.221)	(0.012)		(0.245)	(0.061)
Obs.	1,917	1,907		1,975	1,979
Panel G: CFPS 2010, regression *control* for number of siblings					
Send-down	1.334***	-0.023*		-0.546**	-0.111*
	(0.226)	(0.012)		(0.244)	(0.061)
Obs.	1,896	1,884		1,953	1,956

Notes: Panel A to panel E use CGSS 2003 data. Panel F and G use CFPS 2010 data. All regressions include female dummy, age, years of education before 1978, and province dummies. Regressions in panel A to panel E also include family background variables: father's and mother's years of education, leadership in government or state-owned/collective firms, Communist Party member. Standard errors reported in parentheses are adjusted for clustering at the province level. * p<0.1, ** p<0.05, *** p<0.01.

Table 9: Matching estimates of the impact of send-down

	Nearest five neighbors	Kernel matching (Bandwidth=0.06)
Age at first marriage	1.122***	1.131***
	(0.265)	(0.235)
Married	-0.031*	-0.025
	(0.018)	(0.017)
Intimacy	-0.141**	-0.103*
	(0.064)	(0.057)
Relative	-2.5***	-2.02***
	(0.831)	(0.742)
Happiness	-0.129**	-0.147***
	(0.59)	(0.052)

Notes: Standard errors are reported in parentheses. * p<0.1, ** p<0.05, *** p<0.01.

Appendix Table 1: Summary statistics of CFPS 2010 data

Variable	Obs.	Mean	Std. Dev.
Age at first marriage	1917	25.393	3.540
Married	1907	0.952	0.214
Relative	1975	4.179	5.298
Happiness	1979	3.951	0.976
Send-down	1980	0.287	0.453
Number of siblings	1957	2.956	1.814
Birth year	1980	1954.410	4.825
Female	1980	0.447	0.497
Years of education before 1978	1980	10.064	1.435

Appendix Table 2: Probit regression of being sent down

	Send-down
Father	
Education	0.031***
	(0.010)
Leadership in government or state-owned/collective firms	0.029
	(0.219)
Party member	0.037
	(0.094)
Worked in a private firm	-0.384
	(0.292)
Mother	
Education	0.004
	(0.012)
Leadership in government or state-owned/collective firms	0.082
	(0.606)
Party member	0.033
	(0.172)
Worked in a private firm	0.460
	(0.436)
Education before 1978	0.018
	(0.083)
Female	0.180**
	(0.077)
Age	0.028***
	(0.008)
Province	
Tianjin	-0.293*
	(0.166)
Hebei	-0.351
	(0.245)
Shanxi	-0.878*
	(0.501)
Inner Mongolia	0.898**
	(0.418)
Liaoning	0.418**
	(0.199)
Jilin	0.647**
	(0.271)
Heilongjiang	0.138
	(0.215)
Shanghai	-0.220
	(0.183)

Jiangsu	-0.083
	(0.196)
Zhejiang	-0.120
	(0.297)
Anhui	0.299
	(0.213)
Fujian	-0.181
	(0.251)
Jiangxi	-0.660*
	(0.397)
Shangdong	-0.849***
	(0.255)
Henan	-0.143
	(0.204)
Hubei	-0.334
	(0.221)
Hunan	-0.398
	(0.246)
Guangdong	0.015
	(0.237)
Guangxi	0.097
	(0.217)
Sichuan	-0.247
	(0.269)
Guizhou	-0.305
	(0.276)
Yunnan	-0.230
	(0.285)
Shaanxi	0.203
	(0.226)
Gansu	-0.338
	(0.328)
Constant	-2.262***
	(0.467)
Observations	1,393