Journal of Economic Behavior and Organization 244 (2026) 107496

Contents lists available at ScienceDirect

Journal of Economic Behavior and Organization

journal homepage: www.elsevier.com/locate/jebo

Research Paper

Youth reeducated: The economic preference impacts of China's sent-down movement

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ARTICLE INFO

JEL classification:
D90
J13
O15

Keywords:
The sent-down movement
Economic preferences
China

ABSTRACT

We survey Chinese adults, many of whom experienced the sent-down movement as adolescents, to identify the impact of forced rustication on economic preferences and attitudes. To distinguish the effect of being sent down from the effects of confounding factors correlated with the likelihood of being sent down and the duration of stay, we exploit a discontinuity in the probability of being sent down resulting from the unanticipated termination of the movement. We find that individuals who were sent down are more risk averse, more altruistic, and more likely to return the kindness of others. They are also less likely to support redistribution policies or trust the government.

1. Introduction

Economic preferences play a fundamental role in human decision making. A rich literature in psychology and behavioral economics argues that preferences are shaped by the cultural, political, and macroeconomic environment in which individuals grow up and by the experience of significant events such as wars or famines (Alesina and La Ferrara, 2005; Malmendier and Nagel, 2011; Bauer et al., 2016; Schildberg-Hörisch, 2018; Giuliano and Spilimbergo, 2025; Jin et al., 2026). In this paper, we exploit China's sent-down movement as a natural experiment to identify the causal impact of policy-induced life experiences during adolescence on economic preferences and attitudes.

The sent-down movement was a forced mass rustication movement during the Chinese Cultural Revolution. The movement sent one out of every three urban adolescents to the countryside to perform manual labor and, according to Chairman Mao Zedong, "to be re-educated by the poor farmers." During the 1960s and 1970s, approximately 17 million urban youth (most between ages 16–19) spent from 1 or 2 years up to 10 years away from home living with poor farmers, exposed to the harsh conditions of rural living while performing hard labor (Li et al., 2010). The mass rustication generated drastic changes in living and working conditions for the sent-down cohort as well as to their social interactions. According to a vast literature on social psychology (in particular, the impressionable years hypothesis), individuals are highly susceptible to changes in attitudes, beliefs, and values during late adolescence and early adulthood, while past this critical age susceptibility drops precipitously and remains low throughout the rest of the life cycle (Dennis, 1973; Krosnick and Alwin, 1989; Alwin and Krosnick, 1991; Lu et al., 2018; Akbulut-Yuksel et al., 2020). Thus, the

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https://doi.org/10.1016/j.jebo.2026.107496
Received 5 February 2025; Received in revised form 19 January 2026; Accepted 16 February 2026

sent-down movement offers a unique opportunity to examine how a government policy targeting young adults affects preferences later in life.

We conduct a web-based survey to collect information on preferences. We measure risk aversion, time preference, altruism, positive and negative reciprocity, and trust using questions adapted from the Global Preference Survey (Falk et al., 2015, 2018).[1] Because the goal of the sent-down movement was to encourage collectivist values, we include existing measures of selfishness (Andreoni and Miller, 2002) and trust in the government (from the Chinese General Social Survey) along with our own measures of trust in the media, redistribution preferences, and preferences for equality versus efficiency in the survey.[2] We also collect detailed information on demographic and socioeconomic characteristics of the survey participants, such as age, gender, education, income, and family background. In particular, we have information on each individual's birth date and whether he/she was sent down to the countryside during the sent-down movement.

We implement a regression discontinuity (RD) design to estimate the impact of adolescent experience on economic preferences and attitudes by exploiting variations generated by the sent-down movement. The large-scale mandatory sent-down movement officially began in 1968. After 1977, the government stopped sending urban adolescents to the countryside and started arranging for the sent-down youth to return to cities. China has school-entry age requirements and the sent-down movement generally required urban youth being sent down to first complete junior high school. The school year started on September 1, and finished by the end of June. Students spent six years in primary school, three years in junior high school, and another three years in senior high school (Deng and Treiman, 1997). Therefore, we know that urban youth born in early 1961 had graduated from junior high school by the summer of 1977 and were part of the last cohort being sent down, whereas those born just after the school-entry cutoff date in 1961 were not subject to forced rustication. Our empirical strategy compares the responses of those just above the age cutoff to responses from slightly younger individuals who were barely below the age cutoff. Following Angrist and Krueger (1991), we assume that birth date is not correlated with personal attributes other than age at school entry.

We find that the experience of being sent down during late adolescence and early adulthood played an important role in shaping economic preferences and attitudes. Individuals that were sent down to the countryside during the rustication movement are more risk averse, more altruistic, and more likely to return others' kindness. The sent-down experience also made them less likely to support income redistribution policies and less likely to trust the government. These effects are statistically and economically significant. Note the interesting juxtaposition of preference effects, in which individual altruism is amplified, whereas altruistic government policies are suppressed, is perhaps not surprising given the result on individuals' trust in the government. In our empirical analysis, we also examine the heterogeneity in the effect of being sent down on economic preferences and attitudes. We find that the economic preference impacts of being sent down when young are similar for individuals of different (current) education and income levels, but that women became more risk averse and less likely to trust the government after being sent down compared to men. If manual labor was particularly hard for young women, then at least part of the sent-down effect was amplified by an individual's personal experience.

This paper contributes to the growing literature that links life experiences to preferences. Piketty (1995), for example, shows that parents' income shapes their children's income redistribution preferences and voting behavior (see also Alesina and La Ferrara, 2005; Di Tella et al., 2007). Families affect children's religious preferences (Basin and Verdier, 2000) as well as their risk and trust decisions (Dohmen et al., 2012). Living through the Great Depression or even a recession made people more risk averse and less optimistic (Malmendier and Nagel, 2011; De Haas et al., 2016; Li and Zhang, 2023; Bietenbeck et al., 2025). Preferences also differ significantly between countries (Falk et al., 2018). After German reunification East and West Germans have different redistribution preferences (Alesina and Fuchs-Schundeln, 2007), people living in resource-rich areas are more likely to oppose redistribution policies compared to those living in resource-poor regions (Couttenier and Sangnier, 2015), and people who live in democratic government regimes support democracy more (Fuchs-Schundeln and Schundeln, 2015). Traumatic experiences also affect preferences. For example, violence in Afghanistan is associated with risk aversion (Callen et al., 2014), the slave trade caused reduced willingness to trust in Africa (Nunn and Wantchekon, 2011), and policy-induced famine in China led to distrust in the government (Chen and Yang, 2019). Policy makers have long sought to adjust the content of children's formal education to shape preferences and beliefs. The effectiveness of this approach has recently been documented in China (Cantoni et al., 2017) and elsewhere (Cappelen et al., 2020; Arold, 2024; Costa-Font et al., 2024). The novelty of our work lies in demonstrating that a government's deliberate effort to shape citizens' preferences through changing their life experiences can be effective. The observed increases in altruism and willingness to reciprocate kindness align with Chairman Mao's goal of "re-education." Note, however, that from the government's perspective, the sent-down movement also resulted in unintended consequences, including decreased trust in the government and decreased support for redistribution policies.

Our paper also contributes to the literature on China's sent-down movement, taking a novel approach by exploring the impact of the movement on economic preferences and attitudes, a topic which has previously received little attention. One strand of the existing literature focuses on the effect of the movement on rural areas after the arrival of the urban youth and generally finds a positive impact of the sent-down movement on rural development.[3] The other strand of the literature examines how the experience of being

[1] The Global Preferences Survey measure of risk preferences increases as the degree of risk-seeking behavior increases. We invert this to measure risk aversion for clarity in exposition.

[2] Not all of these measures are commonly measured economic preferences, for example, trust in the media. For this reason we refer to "economic preferences and attitudes."

[3] The sent-down urban youth were either junior high school or high school graduates, whereas most of the rural farmers in the 1960s and 1970s were illiterate or had only several years of primary education. The effects of the arrival of the urban educated youth include reducing teacher

sent down affects the sent-down youth's later-life outcomes. People who were sent down have higher rates of chronic illnesses and mental problems (Gong et al., 2020; He, 2018), lower probability of having successful marriages (He, 2018), lower wages (Guo et al., 2022) and lower participation rates in politics (Shi and Zhang, 2019). At the same time, they are more willing to invest in their childrens' education (Roland and Yang, 2017), but less inclined to provide financial support to their parents (Zhang et al., 2023). The effects of the sent-down experience on education and income are mixed (Xie et al., 2008; Zhou and Hou, 1999). Li et al. (2010) also show that the sent-down movement affected intra-household transfers. Talhelm and Dong (2024) utilized the sent-down movement as a natural experiment, discovering that youth randomly assigned to rice-farming communities displayed a stronger collectivist spirit compared to those assigned to wheat-farming communities. In two papers closely related to ours, Roland and Yang (2017) and Gong et al. (2017) analyze how being sent to the countryside affected beliefs about whether external circumstances, such as luck, fate and powerful others, or one's own efforts are more important and draw opposite conclusions from the same dataset. Our result that the sent-down movement caused changes in economic preferences and attitudes provides a mechanism which elucidates many of the previous findings. For example, lower levels of trust in the government may explain a lower participation rate in politics, and higher altruism may explain a higher willingness to invest in children's education.

The remainder of the paper is organized as follows. In Section 2, we provide some background on China's sent-down movement. We discuss why the Chinese government launched the movement, who was sent down, and what the sent-down youth experienced while living in rural areas. In Section 3, we describe our survey and data, specify the empirical model, and discuss the identification strategy. We present the main results and several robustness checks in Section 4. Section 5 provides the conclusion.

2. China's sent-down movement

The "up to the mountains and down to the countryside movement," often known as the sent-down movement, was one of the most intensive political and social mobilizations during the Cultural Revolution (Bernstein, 1977). The chairman of the Chinese Communist Party (CCP), Mao Zedong, launched the 10-year long "Great Proletarian Cultural Revolution" in May 1966 to purge remnants of capitalism and to reimpose his ideology and power with a campaign that relied heavily upon the mobilization of mass support, particularly among youth. Young students formed "Red Guards," who humiliated and tortured anyone suspected of being counter-revolutionary, took over government offices, and destroyed anything regarded as part of the so-called "Four Olds," which included old customs, old culture, old habits, and old ideas (Bridgham, 1967; Heaslet, 1972). The Red Guards' campaign became increasingly violent in 1967 bringing the country into chaos. In addition, urban unemployment rates were high at this time: more than 6 million secondary school students, many of them Red Guards, were out of school and without a job by 1968 (Zhou and Hou, 1999).

Although a small-scale, voluntary sent-down movement started in the 1950s, the large-scale sent-down movement began in 1967, when some Red Guard students volunteered to go to rural areas to work with peasants. The government endorsed the endeavor (Gu, 1997, p.74). On December 22, 1968, Chairman Mao called for a mass rustication movement to send urban youth to the countryside and made the sent-down movement a mandatory state policy.[4] The CCP was concerned that pro-bourgeois thinking was prevalent among urban youth, and believed that they would benefit from reeducation by rural workers and farmers that lived in more collectivist communities. Note that reeducation was explicitly ideological rather than academic, as the urban youth had much higher educational attainment than peasants. In addition to the stated goal of reeducating youth, the movement was also expected to discharge the Red Guards and restore social order, reduce urban unemployment, and promote rural development (Bernstein, 1977; Pye, 1986; Dietrich, 1997).

The urban youth to be sent down were junior and senior high school graduates, typically between 16 and 19 years old (Wang and Zhou, 2017). Almost all primary, secondary and tertiary level education institutions were closed from 1966 to 1968 and most tertiary level institutions remained closed until 1972 (Bernstein, 1977; Deng and Treiman, 1997). Even after universities were reopened in 1972, senior high school graduates were not allowed to attend college directly; they had to be sent down first.[5] The sent-down movement affected a large number of urban youth: from 1967 to 1978, approximately 17 million urban youth were sent down to rural areas.

Some urban youth went to the countryside voluntarily because they were inspired by the government propaganda associated with the sent-down movement. However, most youth did not want to be separated from their families or give up the better living environment and job opportunities in urban areas. Children from families headed by intellectuals, businessmen, landlords, rich peasants, and those with relatives in Taiwan or the United States had priority to be sent down (Bernstein, 1977). In addition to the likelihood of being sent down, the destination to which youth were sent and the duration of the sent-down experience varied by location and family background. For example, well-connected families might have been able to send their children to rural areas

shortages in rural areas (Deng and Treiman, 1997), increasing rural schooling (Yuan, 2017; Lin, 2019; Chen et al., 2020), facilitating transfers of materials and machinery from urban to rural areas (Honig and Zhao, 2015), as well as improving the rural medical care system (Wang, 1999; Rene, 2013).

[4] Chairman Mao famously stated in December 1968 that "it is very necessary for the urban educated youth to go to the countryside to be re-educated by the poor farmers." The speech marked the official beginning of the state policy and initiated the large-scale sent-down movement.

[5] When universities were reopened in 1972, the major criteria for admission were class background and party loyalty rather than academic achievement. Students from families of workers, peasants, soldiers, and party cadres were desirable. The merit-based college entrance examination was not reestablished until 1977 (Deng and Treiman, 1997; Zhang et al., 2007; Price, 2017).

close to their home cities and get them to return home earlier.[6] Furthermore, in multi-child households not all were sent down, however, we can not assume that this selection was purely random.[7]

For many sent-down youth, the rustication experience was traumatic (Liu, 2009; Rene, 2013). In the 1960s and 1970s, there were huge differences in living and working conditions between urban and rural China. Most rural areas had no electricity, running water or basic sanitation facilities. Most of the urban youth, in their late teens and early twenties, had just finished school and had never before lived in a rural area. They were required to perform strenuous physical labor, sometimes under extreme weather conditions and in parasite-infested environments. They often worked for more than 12 hours a day, 7 days a week. The lack of cultural and spiritual activities was also a big change from city life. Books were difficult to obtain, and reading and writing were often difficult due to long working hours and lack of electricity.[8]

Moving to rural areas also completely changed the social networks of the sent-down youth. They were separated from their families, and some of them were sent to regions thousands of miles away from their homes. In many cases, the youth were allowed to visit their families only once every three years for a few weeks (Zhou and Hou, 1999). Therefore, their day-to-day social interactions were either with those that were sent down to the same village or with local farmers. Many of them lived with local families and befriended them. Some even married local farmers and started families in rural areas.

The Cultural Revolution came to an end in 1976 after the death of Chairman Mao. The government relaxed enforcement of the sent-down policy in 1977 and began arranging for sent-down youth to return to cities. High school graduates were allowed to enter universities after college admissions resumed. By 1979, Chairman Mao's successors had completely ended the forced rustication movement and allowed all the affected youth to return to cities. Fewer than one million (about 5 percent) of sent-down youth never returned to urban areas, often because they married local farmers or found employment in local nonagricultural jobs (Zhou and Hou, 1999).

Forty years after the sent-down movement, some participants feel they learned positive lessons such as honesty, integrity, modesty, and the merits of hard work from rural farmers, and value the friendships they formed with other sent-down youth (Luo, 2012). However, other participants still believe they lost more than they gained. One specific, frequent complaint is that being sent down caused opportunities for further education to be either delayed or lost, leading some scholars to refer to those that were sent down as "a lost generation" (Roland and Yang, 2017). Since fewer people in this age cohort completed their educations, the development of science and technology in China in the 1980s was slowed (National Bureau of Statistics of PRC, 1999). Wang (1999), on the other hand, argues that the sent-down movement postponed, but did not reduce, college education rates for the sent-down youth, because 90% of them would not have attended college anyway, whereas college expansion after the movement created new opportunities for people to continue their education. The sent-down movement coincided with a period of rising basic education in China. Enrollment rates for primary schools increased from 57% in 1963 to 96% in 1976, and rates for junior high school students increased from 2.7 million in 1963 to 23.4 million in 1976 (Ministry of Education of the PRC, 2011). Chen et al. (2020) show that the sent-down movement helped improve basic education in rural areas.

3. Data and empirical strategy

3.1. Data

The data that we use come from our survey, which was carried out by the Virginia Tech Economics Lab using a mobile application operated by the Sojump online platform (http://www.sojump.com) between March and July 2019. Sojump is a service provider in China that engages in online questionnaire, examination, and voting with a sample library of 2.6 million registered users. It is commonly used by social science researchers to collect survey data in China (Mei and Brown, 2018; Zhang and Wang, 2021; Duan et al., 2022; Del Ponte et al., 2024).[9] The questionnaire was designed by the authors.[10] As only urban youth were eligible to be sent

[6] In the 1950s, the CCP assigned a permanent "class" designation to each family on the basis of the family head's source of income, employment status, and political status in the years just prior to Liberation. Good-class origins included revolutionary cadres and soldiers, industrial workers and poor farmers, whereas bad-class origins included former capitalists, landlords, "rightists" (those who were outspoken and criticized the government in the Hundred Flowers campaign in 1957), and counterrevolutionaries (Unger, 1982, p.13–14). Children from bad-class origin families were likely more affected by the sent-down movement.

[7] As shown by Li et al. (2010), there was also selection to be sent down within households.

[8] A genre of Chinese literature, named "literature of the wounded" (*Shanghen Wenxue*), emerged in the late 1970s and portrayed the sufferings of people during the Cultural Revolution. There were numerous accounts of tragic experiences in the sent-down movement.

[9] An increasing number of economic researchers are utilizing survey companies to administer experimental questionnaires (Horton et al., 2011; Alsan et al., 2023; Couper, 2000; Kuziemko et al., 2015), recognizing the methodological advantages and practical efficiencies they offer. These companies provide access to extensive and diverse respondent panels, enabling the collection of large-scale data that is both robust and demographically representative (Stantcheva, 2023). Empirical studies have validated the reliability and accuracy of data obtained through these platforms (Buhrmester et al., 2011; Krupnikov and Levine, 2014). Given these benefits, the use of survey companies for conducting experimental questionnaires not only enriches the empirical toolkit of economists but also should be actively promoted as a valuable and effective approach in economic research.

[10] Prior to the start of data collection all research procedures were approved by Virginia Tech's Institutional Review Board. Questionnaires were completed online, and all subjects provided informed consent prior to participating. Participants took an average of 32.8 minutes to complete the survey for which they were compensated 22 RMB (about 3 US dollars) or half of the average hourly wage rate of 40 RMB (National Bureau of Statistics, 2018). We paid Sojump 3 RMB per observation for their service.

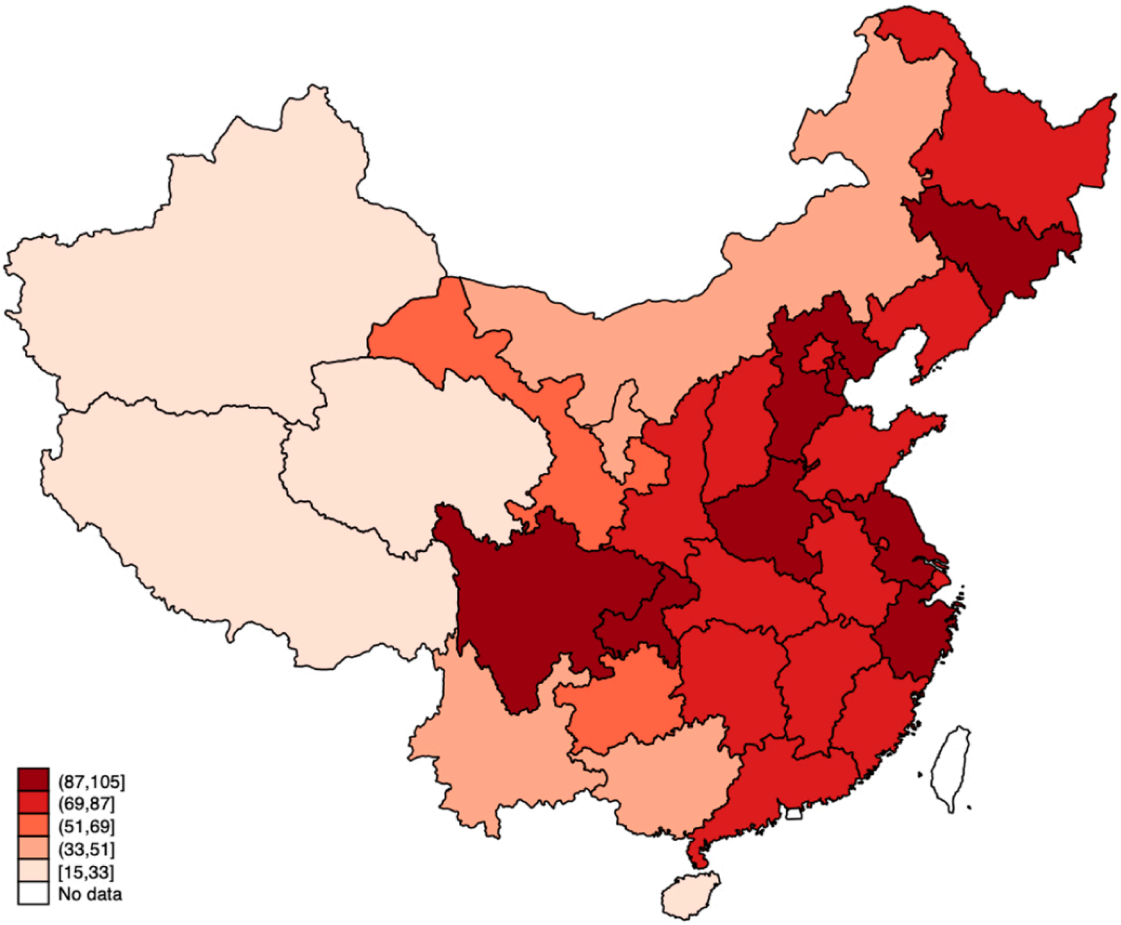

Fig. 1. Our survey sample distribution.
Notes: Our survey was designed by Virginia Tech Economics Lab and conducted using the Sojump online platform in 2019.

down, we requested Sojump to randomly sample participants that were born with urban household registration (*hukou*).[11] We also restricted survey participation to those born between the years of 1935 and 1985 and oversampled those born between 1960 and 1961 to facilitate our RD design. Sojump randomly contacted 3000 individuals from their sample library based on the *hukou* and age restrictions requested by the research team via phone call, text message, WeChat (a popular Chinese messaging and social media app) or email and received 2501 responses, of which 314 were excluded for missing information. An additional 366 observations were excluded because participants were born in rural areas, leaving 1821 valid responses. Our survey sample has a broad geographic coverage as shown in Fig. 1. In Table 2, we compare the geographic distribution of our sample with national population statistics. The only notable difference is a higher share of respondents from Northeast China. Given the well-documented population decline in that region in recent decades, this discrepancy is expected.[12]

[11] Under China's household registration (*hukou*) system, individuals born in rural villages are assigned with "rural *hukou*" whereas those born in cities receive "urban *hukou*." Individuals with rural *hukou* may convert their *hukou* status to urban *hukou* through a few channels, such as enrollment in an institution of higher education, recruitment by a state-owned enterprise, or displacement due to state land expropriation, but *hukou* conversion is generally restrictive and difficult (Colas and Ge, 2019).

[12] In the Appendix Table B.16, we compare the pre-determined demographic characteristics of our sample with those of the corresponding age group in the China Family Panel Studies (CFPS), a widely used national survey. We find no significant differences in age and gender between the two samples. Our sample includes 7.26% minority individuals, compared to 2.90% in the CFPS. According to the 2020 Chinese Population Census, officially recognized minority groups account for 8.89% of the national population, suggesting that the minority proportion in our sample is broadly consistent with national statistics. Because we oversample individuals born between 1960 and 1961, it is not surprising that our sample includes a higher proportion of individuals who were sent down. For parental occupations, the larger share of individuals categorized as "other" in the CFPS stems from differences in occupational classification standards. Importantly, there are no significant differences in the shares of workers and farmers, who made up the majority of the population at the time, across the two samples. Overall, we believe our sample is broadly representative of the relevant age cohorts.

Table 1
Summary statistics.

	Full sample		Effective sample	
	Mean (1)	SD (2)	Mean (3)	SD (4)
Panel A: Preferences				
Risk aversion	0.014	0.474	0.065	0.413
Patience	0.059	0.756	0.033	0.671
Positive reciprocity	0.020	0.763	-0.154	0.765
Negative reciprocity	0.008	0.474	0.001	0.449
Altruism	0.064	0.821	0.013	0.785
Trust others' intentions	0.031	1.027	-0.262	0.884
Trust government	0.032	1.031	-0.285	0.896
Trust media	0.043	1.025	-0.271	0.913
Redistribution preference	0.059	1.058	-0.075	0.794
Preference on equality vs. efficiency	0.047	1.024	-0.132	0.900
Selfishness	-0.017	1.015	-0.219	0.920
Economic rationality	0.982	0.040	0.986	0.036
Panel B: Predetermined variables				
Age	60.36	8.160	58.09	2.614
Probability of being sent down(%)	23.67	42.52	19.95	39.99
Female(%)	49.59	50.01	52.60	49.96
Minority(%)	5.38	22.57	7.26	25.97
Father's occupation (%)				
Workers and peasants	70.62	45.56	69.67	46.00
Leaders and military officers	8.46	27.83	8.65	28.13
Professionals and businessmen	11.15	31.48	11.53	31.96
Others	9.77	29.71	10.15	30.22
Mother's occupation (%)				
Workers and peasants	47.72	49.96	48.21	50.00
Leaders and military officers	13.67	34.37	13.38	34.06
Professionals and businessmen	10.32	30.44	10.15	30.22
Others	28.28	45.05	28.26	45.05
No. of observations	1821		867	

Notes: The full sample is our survey respondents that were born between 1935 and 1985 in urban areas. The effective sample consists of participants born within a window of 20 quarters before and after September 1, 1961.

Our survey includes questions from other well-known surveys and additional questions we designed. Measures of risk aversion, patience, positive and negative reciprocity, altruism and trust in others were taken from the Global Preferences Survey (GPS). These widely-studied measures have been validated using incentivized experiments (Falk et al., 2015, 2018). Because the goal of the sent-down movement was to encourage collectivist values, we also included existing measures of selfishness (Andreoni and Miller, 2002) and trust in the government (from the Chinese General Social Survey) along with our own measures of trust in the media, redistribution preferences, and preference for equality versus efficiency. Following Falk et al. (2018) we standardize all survey measures to have mean 0 and standard deviation 1. We describe the survey in detail in Appendix A. We also collect detailed information on demographic and socioeconomic characteristics of the survey participants, such as gender, ethnicity, parental occupation, own education and income and whether they were sent down to the countryside during the Cultural Revolution. In particular, we collect information on their birth date both in month and year, which is critical for our identification strategy.

The first two columns of Table 1 present sample summary statistics. The average age of the full sample is 60.[13] Of the 1821 individuals in the sample, 431 (or roughly 24%) reported having been sent down. The economic preference variables we consider all exhibit large variations in the sample. The proportion of men and women in the sample is almost the same. Approximately 5% of the sample self-identify as ethnic minorities. The majority of sample members' fathers and mothers were workers or peasants. About 8% of the fathers were either revolutionary cadres or soldiers, which had political privilege under the "class" designation, whereas about 11% of the fathers were professionals and businessmen, which were considered bad class origins during the Culture Revolution (Sullivan, 2012). A larger proportion of the mothers belong to an unspecified "others" occupation, which includes those who were not employed.

[13] Because the date of birth is a highly important variable in this study, we explicitly instructed participants to provide their Gregorian calendar birthdates to prevent the inadvertent use of lunar calendar dates.

Table 2
Population by region in China and our sample.

	National Bureau of Statistics of China		Our Sample	
Region	Population (millions)	Percentage	Pariticipants	Percentage
East China	563.72	39.93	703	38.61
Central China	364.69	25.83	424	23.28
Western China	382.85	27.12	475	26.08
Northeast China	98.51	6.98	219	12.03

Notes: This table presents the regional distribution of our sample alongside the statistics on population distribution across regions in 2020 (The data for this study were gathered in 2019), as reported by the National Bureau of Statistics of China (NBSC, 2021). China is commonly divided into four major regions based on geography, economy, and administrative classification. East China refers to the ten provinces and municipalities of Beijing, Tianjin, Hebei, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, and Hainan. Central China comprises six provinces: Shanxi, Anhui, Jiangxi, Henan, Hubei, and Hunan. Western China includes twelve provinces, autonomous regions, and municipalities: Inner Mongolia, Guangxi, Chongqing, Sichuan, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia, and Xinjiang. The Northeastern China consists of three provinces: Liaoning, Jilin, and Heilongjiang. Our sample statistics are based on participants' current place of residence.

3.2. Empirical strategy and econometric specification

Our goal is to identify the effects of having been sent-down as an adolescent or young adult on economic preferences and attitudes. In the event of non-random selection of individuals who were sent down, a simple comparison of the preferences of the sent-down individuals to the preferences of those not having been sent down would produce biased results. Although participation in the sent-down movement was compulsory, some individuals who were especially sympathetic to the government's goals volunteered to relocate themselves to the countryside, whereas others with privileged families might have avoided being sent down or might have been sent to more desirable rural locations (Zhou and Hou, 1999). In addition, the government allowed families with multiple children to keep one or more children in the city if they already sent children down, and we cannot exclude the possibility that the choice was based on the child's preferences, for example, more altruistic children might have been more likely to be sent down. Any of these possibilities would bias the results of ordinary least squares regression analysis.

A small-scale sent-down movement started in the early 1960s, and the large scale mandatory sent-down movement began in 1967–1968. The government greatly relaxed enforcement of the sent-down policy in 1977 and completely ended the sent-down movement by 1979. As shown in Fig. 2, the number of sent-down youth plummeted after the sent-down movement came to an end between 1977–1978. We take advantage of this drop in sent-down probability due to the end of the mandatory sent-down movement to identify the effect of being sent down on the economic preferences and attitudes of the sent-down youth.

The birth cohorts directly affected by the sent-down movement were determined by the timing of the policy, as well as school age requirements at the time. From the 1950s to the 1980s, children started school at the age of seven (Gong et al., 2020). Key to our empirical strategy, the youngest cohort affected by the sent-down movement were those who graduated from junior high school in 1977, meaning that they were born before September 1, 1961.[14] Those born just after the school-entry cutoff date on September 1, 1961 had not graduated from junior high school in the summer of 1977 and therefore were either not subject to the movement or had a much lower probability of being sent down.[15] The last two columns of Table 1 present summary statistics for our effective sample, defined as individuals born within five years on either side of the cutoff, based on our chosen bandwidth.The choice of bandwidth is an important issue, as it reflects a fundamental trade-off: a narrower bandwidth reduces bias but increases variance, while a wider bandwidth improves precision at the potential cost of greater bias. In our analysis, we examined optimal bandwidth selection using both the Imbens-Kalyanaraman (Imbens and Kalyanaraman, 2012) and Calonico-Cattaneo-Titiunik (Calonico et al., 2014) methods, which yielded a range of bandwidths based on different trade-off preferences. Based on this exploration, we selected a five-year

[14] During the Cultural Revolution, China's education system was very chaotic. Most students went through a schooling schedule of entering school at age 7, followed either by 6 years of primary school plus 3 years of junior high school or by 5 years of primary school plus 4 years of junior high school, although some students went through 5 years of primary school plus 2 years of junior high school (Hannun, 1999; Gong, 2021). Our empirical strategy relies on the fact that most students that were sent down completed 9 years of primary plus junior high school education, which is consistent with the sudden drop in sent-down probability at the 1961 birth cutoff in Fig. 3.

[15] The start and end of the large-scale forced sent-down movement were both unanticipated shocks to most people. Unlike studies such as Gong et al. (2017) that implement an RD design induced by the start of the movement, we explore the birth cohort cutoff caused by the end of the sent-down movement. The oldest cohorts affected by the start of the large-scale sent-down movement were those who graduated from senior high school in 1966 or those born in late 1946. However, the cutoff point generated by the start of the movement suffers from a severe confounding effect of college entrance suspension at the early stage of the Cultural Revolution (Shi and Zhang, 2019; Li and Meng, 2022). Furthermore, because of the small-scale voluntary sent-down movement, a significant number of urban youth born in early 1940s were also sent down. As a result, we observe less sharp discontinuity in sent-down probability exploring the beginning of the movement.

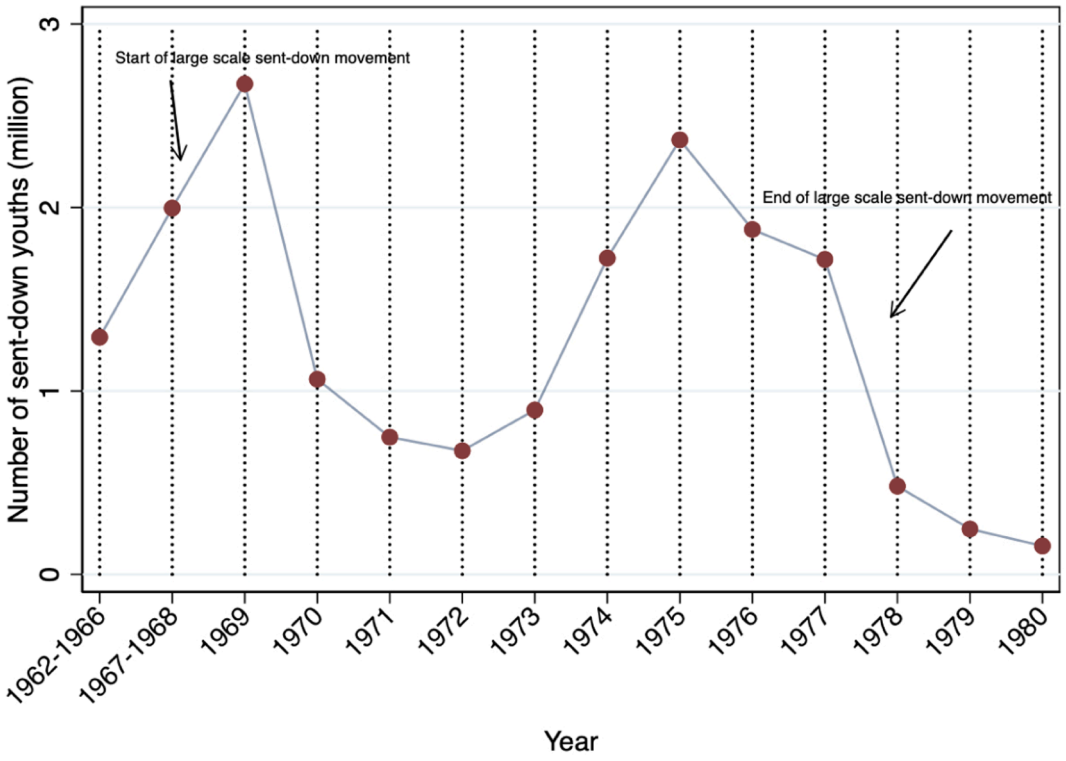

Fig. 2. Number of the sent-down youths, 1962–1980.

Source: Gu (2009).

window around the cutoff as our main specification. Figure C.1 in the Appendix shows the number of respondents in our sample by quarter of birth. The value 0 on the horizontal axis represents the cutoff date used in our analysis, September 1, 1961. The vertical black lines indicate the 20-quarter bandwidth that defines our effective estimation sample. As expected, sample sizes close to the cutoff are larger due to oversampling.

Fig. 3 summarizes the empirical strategy for this RD design in date of birth. The horizontal axis shows the birth date, with a vertical line at the September 1, 1961 cutoff. The graph plots the proportion of individuals in our sample in each birth-quarter bin who were sent down.[16] The solid lines are the local linear fits for each side of the cutoff, and the dashed lines mark the 95% confidence intervals. The figure confirms that the large-scale forced sent-down movement was enforced on the cohorts born before September 1, 1961. While almost no individuals born after the cutoff (hereafter, "control group") were sent down, between 20 to 50 percent of those born immediately before the cutoff ("treatment group") had the sent-down experience. The birth date cutoff generates a more than 30 percentage points discontinuity in the likelihood of being sent down.

Since there are untreated observations on both sides of the cutoff, we adapt a fuzzy RD design to identify the causal effects of the sent-down experience on individuals' economic preferences and attitudes. The fuzzy RD design has the interpretation of instrumental variable (IV) estimation (Hahn et al., 2001; Lee and Lemieux, 2010). Based on the empirical strategy outlined above, we use an indicator for birth date before September 1, 1961 cutoff as an instrument for sent-down status and implement a two-stage least square (2SLS) regression. The first-stage equation for our linear probability model is given by:

$$Sent\_down_i = \alpha_1 + \beta_1 \times Pre_i + \gamma_1 \times f(QOB_i) + \kappa_1 \times Pre_i \times f(QOB_i) + X_i + u_i, \tag{1}$$

where $Sent\_down_i$ is a dummy on whether the individual was sent down during the forced rustication movement, Pre_i is a dummy for birth date before the September 1, 1961 cutoff, and QOB_i is the quarter of birth running variable. The causal relationship of interest is the effect of the sent-down experience on economic preferences and attitudes:

$$Y_i = \alpha_2 + \beta_2 \times \widehat{Sent\_down}_i + \gamma_2 \times g(QOB_i) + \kappa_2 \times \widehat{Sent\_down}_i \times g(QOB_i) + X_i + \epsilon_i, \tag{2}$$

where Y_i captures the preferences for individual i. $\widehat{Sent\_down}_i$ refers to the instrumented variable. $f(.)$ and $g(.)$ are smooth functions of the running variable QOB_i, which control for the direct effect of birth cohort on preferences, and we allow cohort trend to differ

[16] Given the September 1st cutoff and as in Gong et al. (2020), we sort individuals into four birth-quarter bins in each year. The first bin contains those born between September and November, the second between December and February, the third between March and May, and the fourth between June and August.

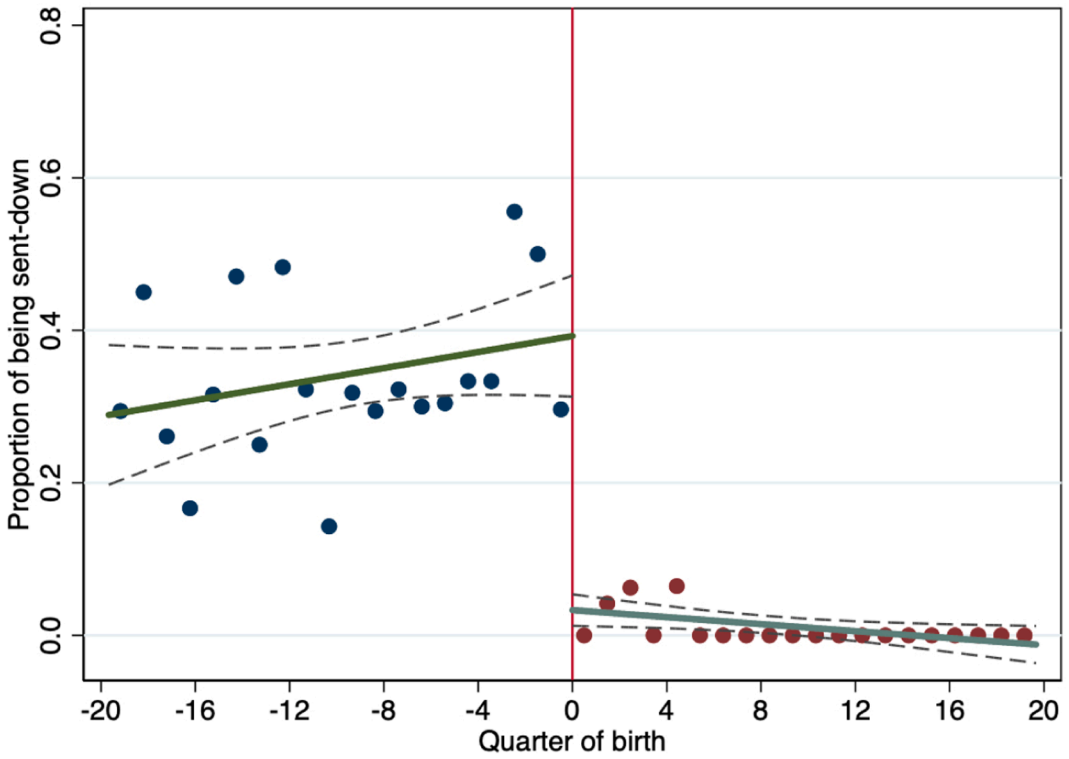

Fig. 3. Sent-down probability by quarter of birth.
Notes: The vertical line indicates the cutoff birth date at September 1, 1961, which is normalized to 0. The dots represent the proportion of people who were sent down for each birth quarter cohort in our sample. The solid lines are fitted values using local linear regressions, and the dashed lines are the 95 percent confidence intervals.

across the cutoff point.[17] In this specification, the coefficient β_2 captures the Late Average Treatment Effect (LATE) for compliers at the cutoff, while the coefficient on the interaction term between the treatment variable, $\widehat{Sent\_down}_i$, and a function of the running variable (QOB), κ_2, reflects how the treatment effect varies with distance from the cutoff. Therefore, the marginal effects at a given QOB is $\beta_2 + \kappa_2 * g(QOB)$. The covariates in X_i include gender, minority status, father and mother's occupations, and quarter of birth fixed effects. Gelman and Imbens (2019) suggest that low-order local polynomials are preferred in RD designs because global high-order polynomials may lead to noisy estimates, sensitivity to the degree of the polynomial, and poor coverage of confidence intervals. Thus, we estimate Eqs. (1) and (2) by assuming local linear and local quadratic functional forms for $f(.)$ and $g(.)$.[18] A triangle kernel weight suggested by Imbens and Lemieux (2008) is used in the nonparametric estimations. We cluster standard errors at the birth quarter level.

3.3. Validity of the RD design

We use the discontinuity in birth date to identify the effect of the sent-down experience on economic preferences and attitudes. The key identifying assumptions of the RD design are that assignment to the treatment is as good as random around the cutoff and the outcome variable is counterfactually smooth across the cutoff.

One potential concern is that parents might have manipulated the timing of their childrens' births. In our case, it is reasonable to believe that people would not have known in 1961 that there would be a surge in the mandatory sent-down movement in 1968 and a sudden end of the movement in 1977, meaning that parents could not have deliberately timed the birth of children as to avoid having them sent down. Additionally, as cesarean sections were not widely available at the time, it would have been very

[17] Some of our outcome variables exhibit markedly different slopes before and after the cutoff. In our fuzzy RD design, the treatment effect is identified solely from the level discontinuity at the cutoff, that is, the jump in the probability of being sent down. However, to avoid misspecification bias, it is essential to account for slope differences around the cutoff. For this reason, we employ local linear and polynomial estimators that fit separate functions on either side of the cutoff, allowing us to flexibly capture these slope changes without attributing them to the treatment effect. The observed slope differences likely reflect the influence of major policy shifts in China during the 1970s and 1980s, including the Cultural Revolution and the Reform and Opening period. While we cannot fully disentangle the effects of these historical events, our flexible specification helps absorb such unobserved influences.

[18] We have also tried the parametric polynomials across different orders as alternative specifications, and the estimated results are very similar.

difficult to manipulate the exact timing of childbirth. Although it is reasonable to treat birth dates relative to the cutoff as random, we conduct a formal validity check nevertheless. We implement a manipulation test based on density discontinuity proposed by Cattaneo et al. (2018) and find that the *P*-value of the densities of the birth cohorts across the cutoff is 0.2518, so we fail to reject the null hypothesis that there is no birth manipulation at the cutoff point. This is consistent with our belief that it was very unlikely that parents strategically timed their children's birth dates, since it was hard to know that the sent-down movement was coming more than 5 years later and ended more than 15 years later.

We also examine the validity of the RD design by checking whether the predetermined variables are smoothly distributed around the cutoff point. We consider gender, minority status, father's occupation, and mother's occupation. Fig. 4 shows the distribution and local linear fit of these predetermined variables. We see no clear jumps in any of these variables around the cutoff. Next, we run RD regressions by using these predetermined variables as dependent variables to test whether the instrument predicts their changes around the cutoff:

$$X_i = \alpha_0 + \beta_0 \times Pre_i + \gamma_0 \times h(QOB_i) + \kappa_0 \times Pre_i \times h(QOB_i) + \upsilon_i, \tag{3}$$

where X_i is a predetermined covariate for individual i. Table 3 presents the covariate balance tests. The sample is individuals in our sample with a birthday around September 1, 1961 cutoff. We use a 20-quarter bandwidth on each side; this sample includes 867 individuals. As shown in Table 3, all covariates are balanced at the cutoff under the local linear specification. The dummy variable on minority status is not smooth at the cutoff under the local quadratic specification. People born before the cutoff are less likely to be members of ethnic minority groups. Under both specifications, the joint *F*-test fails to reject the null hypothesis of covariate balance.

In addition, our RD specification might be invalid if there are confounding changes around the cutoff that had a discontinuous effect on people born on different sides of the cutoff. First, a possible confounding factor is the Cultural Revolution, which occurred between 1966 and 1976, resulting in many changes in society. However, its effects are not discontinuous. While cohorts born before and after our cutoff experienced the Cultural Revolution at different ages, for example, those born in 1960 and 1961 were 6 and 5 years old, respectively, when the Cultural Revolution occurred, it is reasonable to believe the influence of the Cultural Revolution is continuous across cohorts similar in age. By controlling for the linear cohort trend, therefore, we can control for the potential influence of the Cultural Revolution.

A second possible confounding factor is the closure of all schools from 1966 to 1967. However, the cohorts around the cutoff were not affected by the closure of schools. After October 1967, the schools reopened and allowed students to resume schooling. The cohorts around September 1961 were not affected by the school closure since in 1966 they had not yet reached schooling age. Thus, their education before being sent down was not disrupted by the school closure.

A third possible confounding factor is college entrance suspension. The cohorts around the cutoff were not affected by the entrance suspension. At the start of the Cultural Revolution, the college entrance examination was stopped, and there was almost zero college enrollment between 1966 and 1969. In 1970, a small number of universities were allowed to resume enrolling students through recommendations rather than test-based examinations, and this practice was carried out nationwide after 1972. After 1977, the national college entrance examination was resumed (Deng and Treiman, 1997; Zhang et al., 2007; Price, 2017). Therefore, people who graduated from senior high school in 1976 or earlier and people who graduated in 1977 or later may have had different opportunities for college education (Roland and Yang, 2017). This corresponds to the cutoff of September 1958, which is much earlier than the cutoff age for being sent down, September 1961. Thus, it is reasonable to believe that there would be no systematic difference in college education between cohorts born before and after September 1961.

4. Empirical results

4.1. Baseline results

We estimate Eq. (2) on the sample born within 20 quarters of the September 1, 1961 cutoff. We instrument the variable on the sent-down experience by Pre_i, a dummy for birth date before the birth cutoff. Fig. 3 provides a visual presentation of our first-stage results. The figure shows that the birth date cutoff generates a more than 30 percentage points discontinuity in the likelihood of being sent down. Corresponding to the discontinuity in sent-down probability, Fig. 5 repeats the graphical exercises by plotting economic preferences and attitudes against quarter of birth and reveals a discernible change in *positive reciprocity*, *trust government*, and *redistribution preference* around the cutoff but not in other preference variables.

Next we turn to the discussion of regression results. For comparison purposes, Appendix Table B.17 reports the simple OLS estimates of the association between the sent-down experience and preferences. We use the same sample that were born within 20 quarters of the birth cutoff so that the estimates are comparable. According to the estimates in Table B.16, the sent-down individuals are different from individuals without any sent-down experience in *patience*, *positive reciprocity*, *negative reciprocity*, *altruism*, *trust others*, *trust government*, *trust media*, *redistribution preference*, and *equality vs. efficiency* (column 1), but some of the differences including those in *trust others*, *trust government*, *trust media*, and *equality vs. efficiency* become statistically insignificant when we control for gender, minority status and parental occupations (column 2). However, as we have discussed before, the OLS estimates might be biased due to self-selection. For example, more altruistic individuals might volunteer to be sent down to help rural people.

To measure the causal effect of the sent-down movement, we take advantage of the RD design to estimate the effect of the sent-down experience on individual preferences and report the regression results in Tables 4 and 5. Table 4 reports the reduced form estimates on the effects of born before the September 1, 1961 cutoff on the economic preference variables. More specifically, we

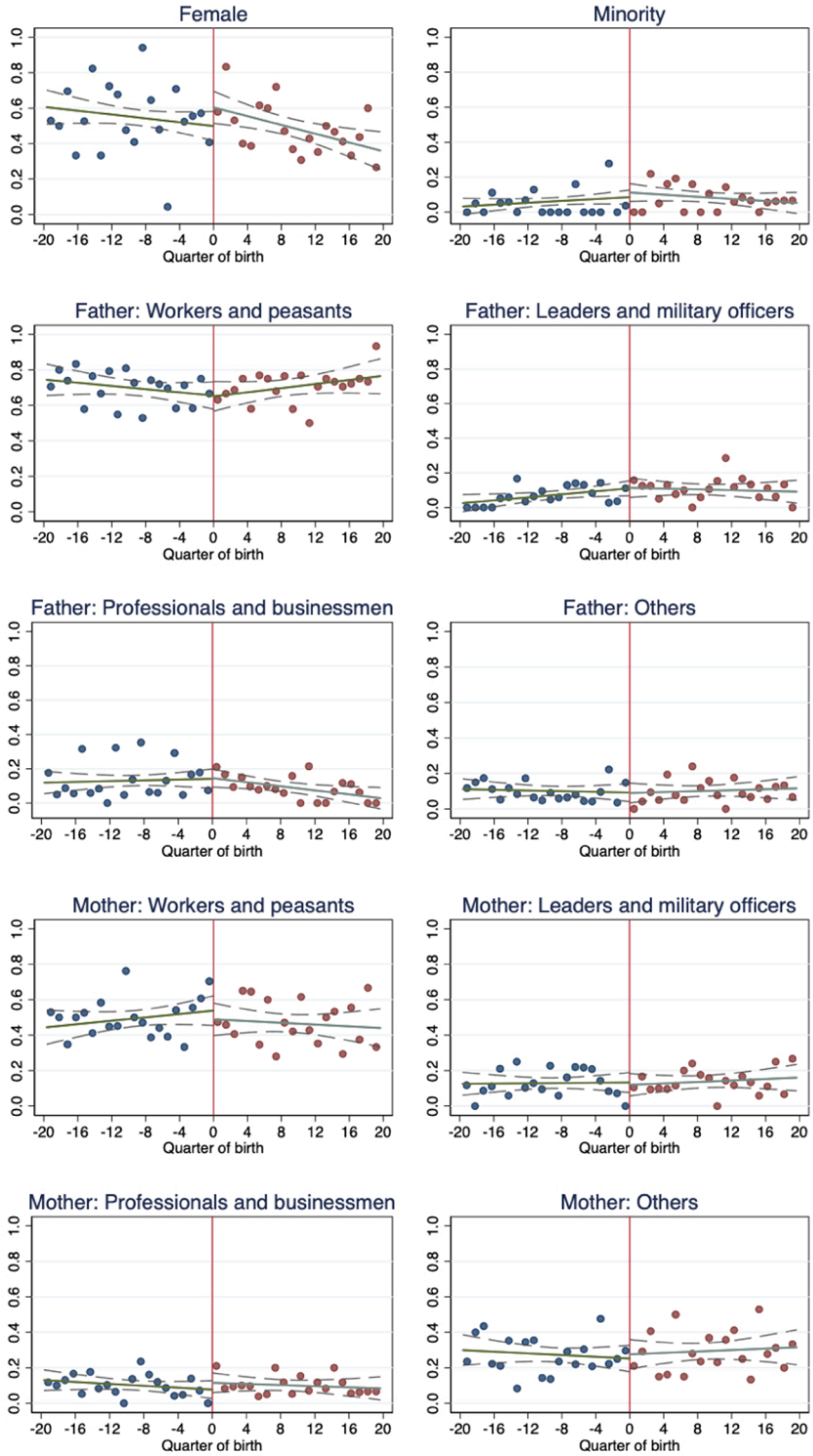

Fig. 4. Distribution of predetermined variables.

Notes: The vertical lines indicate the cutoff birth date at September 1, 1961, which is normalized to 0. The dots represent the means of predetermined variables for each birth quarter cohort in our sample. The solid lines are fitted values using local linear regressions, and the dashed lines are the 95 percent confidence intervals.

Table 3
Covariate balance tests.

Variables	Local linear	Local quadratic	Control mean
1 Female	-0.095	-0.103	0.494
	(0.058)	(0.090)	
Minority	0.012	-0.073**	0.084
	(0.027)	(0.035)	
Father's occupation			
Workers and peasants	0.023	0.062	0.694
	(0.066)	(0.098)	
Leaders and military officers	-0.009	-0.061	0.103
	(0.041)	(0.060)	
Professionals and businessmen	-0.016	-0.054	0.096
	(0.048)	(0.072)	
Others	0.002	0.053	0.106
	(0.040)	(0.058)	
Mother's occupation			
Workers and peasants	0.032	0.110	0.471
	(0.069)	(0.102)	
Leaders and military officers	0.015	-0.036	0.134
	(0.041)	(0.053)	
Professionals and businessmen	-0.016	-0.043	0.099
	(0.039)	(0.056)	
Others	-0.031	-0.031	0.296
	(0.062)	(0.092)	
Observations	1821	1821	
Effective observations	867	867	
Joint *F*-test	3.02	4.86	
p-value	0.933	0.772	

Notes: The table presents covariate balance tests for the local linear and local quadratic RD specifications from Eq. (3) with a bandwidth of 20 quarters. All regressions control for dummies for quarter of birth. Control mean denotes the mean values of the predetermined variables for people born after the cutoff. Numbers in the parentheses are standard errors clustered at the birth quarter level. * stands for significance at the 10% level.

regress measures of twelve different preferences and attitudes from our survey on the dummy variable Pre_i.[19] We report in the table estimates for both local linear and local quadratic regressions and for specifications with and without controlling for individual characteristics on gender, minority status and parental occupations. We find that individuals born before the September 1, 1961 cutoff exhibit statistically significant higher *positive reciprocity*, lower *trust government* and lower *redistribution preference* under local linear specification (columns 1 and 2). When we use the local quadratic specification, the cohort eligible for being sent down also appears to have higher risk aversion, lower preferences for *equality vs. efficiency*, and *lower selfishness* (columns 3 and 4). All of the estimates are robust when we include controls for individual observed characteristics.[20]

Table 5 reports the 2SLS estimates from the fuzzy RD design using Eqs. (1) and (2). In our specification, the running variable (QOB) determines the probability of treatment (being sent down), and the RD cutoff induces a discrete jump in treatment probability, which we use as an instrument for treatment. The bottom panel presents the first-stage estimation results with the status of being sent down as dependent variable while controlling for the quarter of birth trends on both sides of the cutoff and quarter of birth fixed effects. In all columns, the instrument is positive and statistically significant. Being born before the cutoff is shown to have led to a 44 to 56 percentage points higher probability of having been sent down. In all specifications, the F-statistics for the IV are large, thereby suggesting that the IV has a high explanatory power for the endogenous variable.

Under standard assumptions, such as continuity of potential outcomes and no manipulation of the running variable, our fuzzy RD design identifies the LATE for individuals whose treatment status is influenced by being just above or below the cutoff (i.e., compliers). The top panel of Table 5 presents our main estimates on the effects of the sent-down experience on economic preferences and attitudes. The sent-down status is first predicted using the birth cutoff and other control variables. In column 1 of Table 5, we report estimation results from local linear regressions with only the quarter of birth trend, its interaction with the cutoff, and quarter of birth fixed effects as controls. The sent-down experience has a significantly positive effect on *risk aversion*, *positive reciprocity*, and *altruism*, a significantly negative effect on *trust government*, *redistribution preference*, *equality vs. efficiency*, and *selfishness*, and a statistically insignificant effect on *patience*, *negative reciprocity*, *trust others*, *trust media*, and *economic rationality*. Column 5 of the

[19] Here we count multi-part GPS preference measures, such as risk aversion, as a single preference measure.

[20] In our baseline regression analysis, we controlled for age trends. Additionally, to account for the potential confounding effect due to retirement, we included a control variable indicating whether individuals had reached 60 years of age. The inclusion of these variables did not affect the results.

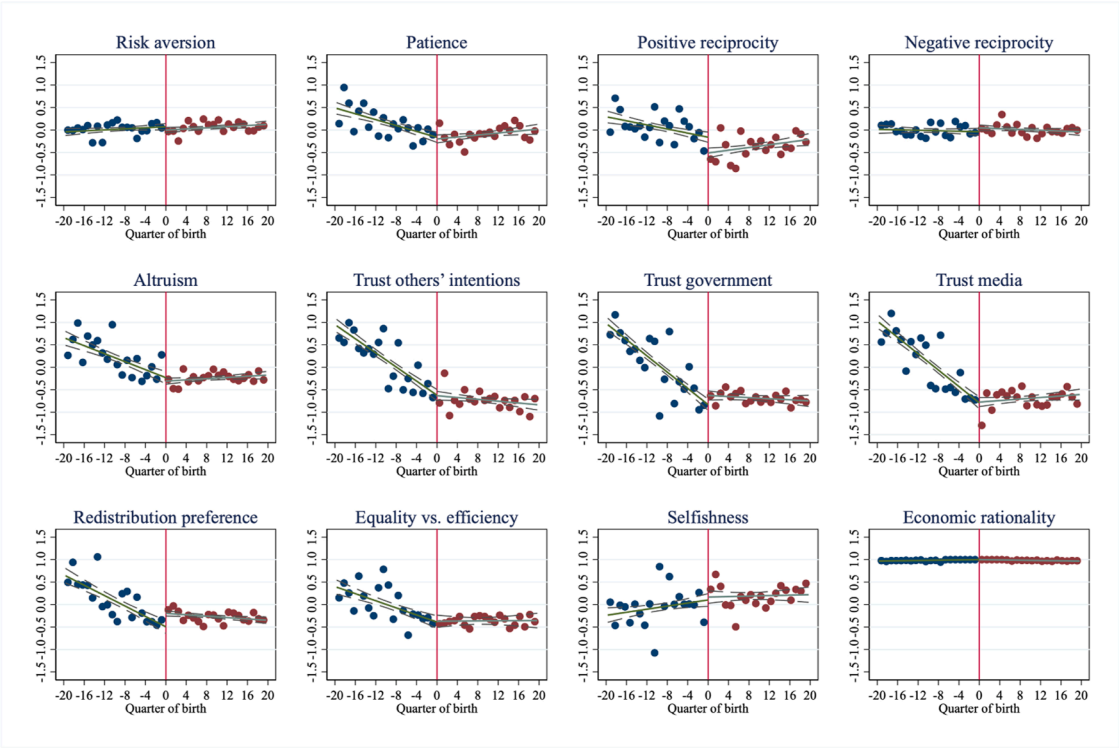

Fig. 5. Distribution of outcome variables on economic preferences.

Notes: The vertical lines indicate the cutoff birth date at September 1, 1961, which is normalized to 0. The dots represent the means of economic preference variables for each birth quarter cohort in our sample. The solid lines are fitted values using local linear regressions, and the dashed lines are the 95 percent confidence intervals.

table presents the mean values of the economic preference and attitude variables for people in the control group, that is, those born after the birth cutoff. A comparison between the estimated coefficients in column 1 and the control means in column 5 indicate that the effects of the sent-down experience on individual preferences for *risk aversion*, *positive reciprocity*, *altruism*, *trust government*, *redistribution preference*, *equality vs. efficiency* and *selfishness* are not only statistically significant, but also economically significant. For example, average *risk aversion* for those born after the birth cutoff is equal to 0.092, and the sent-down experience is estimated to increase *risk aversion* by 0.278. When we include additional controls for individual characteristics on gender, minority status and parental occupations in column 2, the coefficient estimates are quite similar to those in column 1, except that the estimate on patience becomes statistically significant whereas the estimate becomes statistically insignificant for selfishness. Columns 3 and 4 present the estimates from a local quadratic specification with and without controlling for individual characteristics. The overall results remain robust. We find that the sent-down experience has a statistically significant positive effect on *risk aversion*, *positive reciprocity* and *altruism* and a significantly negative effect on *trust government* and *redistribution preference* in all specifications.[21] In Appendix Table B.18, we report the estimated values of κ_2 from our baseline specifications. Several of these estimates are statistically significant, suggesting heterogeneity in the treatment effect. One source of treatment heterogeneity may come from differences in sent-down duration, which we will explore below.

We examine the impact of being sent down on a broad range of economic preferences and attitudes. It is possible that significant results emerge from our analysis due to chance rather than from an actual treatment effect. Since there is as yet no consensus regarding the best way to correct for multiple hypothesis testing (MHT), we adjust the *p*-values using a number of different methods. Motivated by List et al. (2019), we use Anderson (2008)'s method to compute sharpened *q*-values to correct for the false discovery rate (FDR). We also calculate Romano-Wolf adjusted *p*-values following Clarke et al. (2020) to correct for the familywise error rate (FWER). In the Appendix, Tables B.19 and B.20 present the results of these corrections along with the unadjusted *p*-values from our

[21] The RD estimates on trust government and redistribution preference have opposite signs when compared with the OLS estimates. OLS results show that the sent-down individuals are more likely to trust the government and support redistribution policy, whereas the RD estimates show that the sent-down movement has made individuals less likely to trust the government and support redistribution policy. These differences may be explained by the fact that youth with revolutionary ideals were more likely to volunteer to relocate themselves to the countryside (Zhang et al., 2007; Zhou and Hou, 1999). The individuals who trust government and support redistribution policy more might have been more likely to participate in the sent-down movement. This suggests that statistical bias may provide an explanation for why several previous studies (Zhou and Hou, 1999) showed the sent-down individuals trust government more whereas others (Harmel and Yeh, 2016; He, 2018) showed they trust the government less.

Table 4
Reduced-form estimates.

Outcomes	Local linear		Local quadratic		Control Mean
	(1)	(2)	(3)	(4)	(5)
Risk aversion	0.062	0.062	0.201***	0.205***	0.092
	(0.052)	(0.052)	(0.077)	(0.077)	
Patience	-0.052	-0.101	-0.058	-0.114	-0.101
	(0.080)	(0.080)	(0.119)	(0.119)	
Positive reciprocity	0.389***	0.331***	0.447***	0.365***	-0.427
	(0.089)	(0.090)	(0.133)	(0.134)	
Negative reciprocity	-0.076	-0.073	-0.056	-0.050	0.005
	(0.056)	(0.057)	(0.084)	(0.085)	
Altruism	0.060	0.030	0.201	0.169	-0.251
	(0.090)	(0.091)	(0.134)	(0.135)	
Trust others' intentions	-0.049	0.017	-0.054	0.020	-0.712
	(0.089)	(0.089)	(0.132)	(0.132)	
Trust government	-0.233**	-0.173*	-0.365***	-0.291**	-0.678
	(0.090)	(0.090)	(0.134)	(0.134)	
Trust media	-0.098	-0.039	-0.054	0.043	-0.689
	(0.091)	(0.091)	(0.135)	(0.135)	
Redistribution preference	-0.321***	-0.307***	-0.346**	-0.325**	-0.265
	(0.091)	(0.093)	(0.136)	(0.138)	
Equality vs. efficiency	-0.143	-0.114	-0.358**	-0.295*	-0.311
	(0.109)	(0.110)	(0.162)	(0.163)	
Selfishness	-0.081	-0.046	-0.407**	-0.353**	0.170
	(0.115)	(0.115)	(0.170)	(0.171)	
Economic rationality	0.001	0.001	-0.000	-0.001	0.986
	(0.004)	(0.005)	(0.007)	(0.007)	
Covariates	no	yes	no	yes	
Effective observations	867	867	867	867	

Notes: The table presents reduced-form estimates of the effects of the birth cutoff dummy on economic preferences. Columns 1 and 3 use linear and quadratic regression, respectively. Columns 2 and 4 add gender, minority status, and parental occupations as additional controls. Control mean denotes the mean values of the variables for people born after the cutoff. Numbers in the parentheses are standard errors clustered at the birth quarter level. ***, **, and * stand for significance at the 1%, 5%, and 10% level, respectively.

baseline estimates. Our findings are generally robust to the correction for multiple hypothesis testing. The FDR sharpened *q*-values do not change the significance of our estimates in any meaningful way. The Romano-Wolf correction makes more severe adjustment because the method avoids making *any* type I error. Given the large number of outcomes and limited sample size in this study, we lose some power when applying this method. Therefore, the Romano-Wolf adjusted *p*-values are somewhat more sensitive to model specifications.

4.2. Robustness checks

We undertake several robustness checks to examine the validity of our discontinuity estimates. First, our RD estimates, if credible, should be robust to different choices of the bandwidth size (Lee and Lemieux, 2010). In our baseline estimates, we choose a bandwidth of 20 quarters (5 years) on both sides of the birth cutoff, or 120 months. In Table 6, we explore the robustness of the estimation results to alternative bandwidth choice. We follow the mean square error (MSE)-optimal method proposed by Calonico et al. (2014) to choose the optimal bandwidth in all regressions on every preference measure. Again, we consider both local linear and local quadratic specifications without and with individual control variables. Depending on the outcome variable for a specific economic preference and model specification, the optimal bandwidth ranges from approximately 70 to 170 months. We show that the coefficients on the sent-down experience are very stable when we use the alternative optimal bandwidths in all specifications. The coefficient estimates on sent-down status for *risk aversion*, *positive reciprocity*, *altruism*, *trust government*, *redistribution*, *equality vs. efficiency*, and *selfishness* remain sizable, statistically significant, and similar in magnitude to those reported in Table 5.[22]

[22] We have also tried an alternative bandwidth of 16 quarters (4 years) on both sides of the birth cutoff and present the estimates in Appendix Table B.21. Because of the smaller effective sample size, the parameters are generally less precisely estimated but the main results are very similar to those reported in Table 5. In Appendix Table B.22, we test the sensitivity of our estimates to the kernel function specification. We use the Epanechnikov kernel function suggested by Calonico et al. (2017) as an alternative to the common triangular kernel function used in our baseline estimates. The main results remain robust and consistent except that the coefficients on sent-down status for *altruism* and *selfishness* become statistically insignificant under local linear specifications.

Table 5
IV estimates of the effects of the sent-down experience on economic preferences.

Outcomes	Local linear		Local quadratic		Control Mean
	(1)	(2)	(3)	(4)	(5)
Risk aversion	0.278**	0.289**	0.422***	0.458***	0.092
	(0.122)	(0.124)	(0.146)	(0.153)	
Patience	-0.119	-0.219*	-0.224	-0.373**	-0.101
	(0.127)	(0.131)	(0.150)	(0.161)	
Positive reciprocity	0.936***	0.762***	0.677***	0.445**	-0.427
	(0.191)	(0.187)	(0.217)	(0.220)	
Negative reciprocity	-0.159	-0.156	-0.117	-0.113	0.005
	(0.113)	(0.113)	(0.130)	(0.133)	
Altruism	0.265**	0.214*	0.615***	0.610***	-0.251
	(0.122)	(0.122)	(0.155)	(0.160)	
Trust others' intentions	-0.118	0.087	0.098	0.412**	-0.712
	(0.162)	(0.161)	(0.175)	(0.184)	
Trust government	-0.641***	-0.461***	-0.694***	-0.452**	-0.678
	(0.182)	(0.175)	(0.213)	(0.205)	
Trust media	-0.158	0.054	0.173	0.426**	-0.689
	(0.157)	(0.156)	(0.179)	(0.187)	
Redistribution preference	-0.754***	-0.703***	-0.804***	-0.736***	-0.265
	(0.139)	(0.136)	(0.160)	(0.159)	
Equality vs. efficiency	-0.509**	-0.386*	-0.546**	-0.319	-0.311
	(0.222)	(0.217)	(0.264)	(0.256)	
Selfishness	-0.499*	-0.380	-1.199***	-1.057***	0.170
	(0.269)	(0.268)	(0.384)	(0.387)	
Economic rationality	-0.001	-0.003	0.003	-0.001	0.986
	(0.003)	(0.003)	(0.004)	(0.004)	
Covariates	no	yes	no	yes	
Effective observations	867	867	867	867	
	First-stage estimates of cutoff effects				
Being sent down	0.449***	0.444***	0.565***	0.549***	0.013
	(0.052)	(0.052)	(0.078)	(0.077)	
F-statistics	68.07	15.06	51.44	14.13	
R-squared	0.19	0.19	0.19	0.19	

Notes: The table presents RD IV estimates of the impact of the sent-down experience on economic preferences. The sent-down experience is measured by a dummy on whether the individual was sent down during the forced rustication movement. In all specifications, we instrument the sent-down experience using a dummy for birth date before the September 1, 1961 cutoff, and the bandwidth is 20 quarters. Columns 1 and 3 use local linear and local quadratic RD specifications, respectively. Columns 2 and 4 add gender, minority status, and parental occupations as additional controls. We also report the first-stage coefficients on the birth cutoff dummy and F-statistics in all models. Control mean denotes the mean values of the variables for people born after the cutoff. Numbers in the parentheses are standard errors clustered at the birth quarter level. ***, **, and * stand for significance at the 1%, 5%, and 10% level, respectively.

Next, we check the robustness of our estimates by using an alternative measure for the sent-down experience. Thus far, we have used a binary variable on whether an individual was ever sent down to characterize the sent-down experience. It is reasonable to believe that how much a person was affected may also depend on how long he/she stayed in the countryside. Hence, we use time spent in the countryside during the sent-down movement as an alternative measure for the sent-down experience and conduct the same RD regressions as before. For those who were sent down in our sample, the sent-down duration varies from less than a year up to 10 years and the average is 4.4 years. Appendix Figure C.2 shows how the duration of being sent down varies by QOB. The duration generally declined for younger cohorts and dropped sharply to near zero immediately after the birth date cutoff, with the exception of a small number of individuals born just after the threshold. We follow the method developed by Dong et al. (2023) to implement an RD design with a continuous treatment.

The results using sent-down duration are reported in Table 7. The bottom panel presents the first-stage estimation results with sent-down duration as dependent variable. In all columns, the instrument is positive and statistically significant. Being born before the cutoff led to a 2.4 to 3 years longer period of having been sent down. In the top panel of Table 7, the coefficients on *risk aversion*, *positive reciprocity*, *altruism*, *trust government*, *redistribution preference*, *equality vs. efficiency* and *selfishness* all have the same signs and significance as those from the baseline estimates presented in Table 5. The estimated coefficients on sent-down duration in Table 7 captures the average effects of one year increase in sent-down duration for compliers around the cutoff whereas the estimated coefficients on the binary variable on the sent-down experience in Table 5 measure the average effects of being sent down for compliers around the cutoff. As expected, the former effects are smaller than the latter effects.

Table 6
Robustness check using optimal bandwidth.

Outcomes	Local linear		Local quadratic	
	(1)	(2)	(3)	(4)
Risk aversion	0.376***	0.425***	0.400***	0.445***
	(0.136)	(0.145)	(0.139)	(0.149)
Patience	0.007	-0.201	-0.278*	-0.437***
	(0.125)	(0.130)	(0.153)	(0.167)
Positive reciprocity	0.979***	0.770***	0.930***	0.585***
	(0.187)	(0.185)	(0.202)	(0.204)
Negative reciprocity	-0.164	-0.149	-0.170	-0.175
	(0.111)	(0.115)	(0.127)	(0.128)
Altruism	0.260**	0.376***	0.221	0.556***
	(0.121)	(0.130)	(0.136)	(0.158)
Trust others' intentions	-0.116	0.110	0.002	0.517***
	(0.162)	(0.162)	(0.174)	(0.190)
Trust government	-0.640***	-0.459**	-0.937***	-0.711***
	(0.182)	(0.180)	(0.218)	(0.207)
Trust media	-0.163	0.033	-0.068	0.201
	(0.155)	(0.154)	(0.174)	(0.176)
Redistribution preference	-0.755***	-0.699***	-0.790***	-0.732***
	(0.139)	(0.137)	(0.159)	(0.156)
Equality vs. efficiency	-0.553**	-0.409*	-0.680***	-0.544**
	(0.228)	(0.227)	(0.257)	(0.251)
Selfishness	-0.561**	-0.674**	-1.361***	-1.317***
	(0.278)	(0.318)	(0.408)	(0.428)
Economic rationality	-0.001	-0.003	-0.001	-0.003
	(0.003)	(0.004)	(0.004)	(0.004)
Covariates	no	yes	no	yes

Notes: The table presents RD IV estimates of the impact of the sent-down experience on economic preferences using the optimal bandwidth chosen by the mean square error (MSE)-optimal method (Calonico et al., 2014). In all specifications, we instrument the sent-down experience using a dummy for birth date before the September 1, 1961 cutoff, and use the optimal bandwidth. Depending on the outcome variable of specific economic preference and the model specification, the optimal bandwidth ranges from approximately 70 to 180 months. Columns 1 and 3 use local linear and local quadratic RD specifications, respectively. Columns 2 and 4 add gender, minority status, and parental occupations as additional controls. Numbers in the parentheses are standard errors clustered at the birth quarter level. ***, **, and * stand for significance at the 1%, 5%, and 10% level, respectively.

As discussed in Section 2, Chinese schools were suspended during 1966 and 1967. Consequently, individuals born before September 1960 may have experienced this suspension. To control for this potential impact, we conducted an RD regression excluding subjects born before 1960. The results presented in Table 8 show that two preferences and attitudes exhibited changes: the significance of *positive reciprocity* and *trust government* was no longer observed. However, excluding individuals with suspension experiences resulted in a markedly reduced sample size, suggesting that the loss of significance for these two variables may be attributable to insufficient sample size.

One purpose of the sent-down movement was to discharge the Red Guards during the Cultural Revolution to relieve violence and chaos in cities as well as urban unemployment. Therefore, a potential concern is that our findings could be driven by experiencing or escaping from violence and chaos in cities during the first few years of the Cultural Revolution rather than by the sent-down experience itself. To control for the potential influence of city violence, we adopt the strategy of Bai and Wu (2017) and construct a province-level measure for city violence by dividing the number of victims of violence during the Cultural Revolution, obtained from the China Political Events Dataset, 1966–1971 (Walder, 2017), by the total population in each province in 1964. Column 1 of Table 9 reports the estimated effect of city violence in one's province during the Cultural Revolution on an individual's economic preferences and attitudes. We find that higher city violence is associated with significantly lower *positive reciprocity*, *altruism*, *trust government*, and *redistribution preferences*. In the next four columns of Table 9, we explore whether the estimated effects of the sent-down experience on economic preferences and attitudes are affected by city violence. We do this by adding the level of city violence as an additional control variable in Eq. (2). We find that the estimated effects of the sent-down experience on all economic preferences and attitudes are very similar to our baseline estimates, suggesting that our results are robust to including the impact of city violence.

Another possible confounding historical event is China's great famine between 1959 to 1961, which has an estimated death toll due to starvation that ranges in the tens of millions (Smil, 1999; Meng et al., 2015). It has been shown that the great famine caused serious health and economic consequences for the survivors, especially for those with in-utero and early childhood exposure to famine (Chen and Zhou, 2007; Meng and Qian, 2009). Some individuals in our sample were exposed to this tragic event. To control for the

Table 7
Effects of sent-down duration on economic preferences.

Outcomes	Local linear		Local quadratic	
	(1)	(2)	(3)	(4)
Risk aversion	0.051**	0.054**	0.081***	0.090***
	(0.023)	(0.023)	(0.028)	(0.030)
Patience	-0.022	-0.041*	-0.043	-0.074**
	(0.023)	(0.024)	(0.029)	(0.032)
Positive reciprocity	0.172***	0.142***	0.134***	0.088**
	(0.036)	(0.035)	(0.042)	(0.044)
Negative reciprocity	-0.029	-0.029	-0.023	-0.022
	(0.021)	(0.021)	(0.025)	(0.026)
Altruism	0.049**	0.040*	0.118***	0.120***
	(0.023)	(0.023)	(0.032)	(0.034)
Trust others' intentions	-0.022	0.016	0.019	0.081**
	(0.030)	(0.030)	(0.033)	(0.036)
Trust government	-0.117***	-0.086***	-0.133***	-0.089**
	(0.034)	(0.033)	(0.042)	(0.041)
Trust media	-0.029	0.010	0.033	0.084**
	(0.029)	(0.029)	(0.035)	(0.038)
Redistribution preference	-0.138***	-0.131***	-0.154***	-0.145***
	(0.025)	(0.025)	(0.031)	(0.032)
Equality vs. efficiency	-0.093**	-0.072*	-0.105**	-0.063
	(0.041)	(0.041)	(0.052)	(0.051)
Selfishness	-0.092*	-0.071	-0.230***	-0.208***
	(0.049)	(0.050)	(0.074)	(0.077)
Economic rationality	-0.000	-0.001	0.001	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Covariates	no	yes	no	yes
Effective observations	867	867	867	867
	First-stage estimates of cutoff effects			
Sent-down duration	2.448***	2.385***	2.940***	2.791***
	(0.293)	(0.290)	(0.442)	(0.437)
F-statistics	68.57	14.75	44.87	13.99
R-squared	0.18	0.19	0.18	0.19

Notes: The table presents RD IV estimates of the impact of sent-down duration on economic preferences. Sent-down duration is measured by the number of quarters an individual was sent down during the forced rustication movement. In all specifications, we instrument sent-down duration using a dummy for birth date before the September 1, 1961 cutoff, and the bandwidth is 20 quarters. Columns 1 and 3 use local linear and local quadratic RD specifications, respectively. Columns 2 and 4 add gender, minority status, and parental occupations as additional controls. We also report the first-stage coefficients on the birth cutoff dummy and F-statistics in all models. Numbers in the parentheses are standard errors clustered at the birth quarter level. ***, **, and * stand for significance at the 1%, 5%, and 10% level, respectively.

influence of the great famine, we construct a province-level severity of the famine following Meng et al. (2015) by using the birth cohort sizes of survivors observed in 1990 census as a proxy for famine severity. In particular, we define local famine severity as one minus the ratio of the cohort size of the famine cohorts (1959–1961) over that of the non-famine cohorts (1955–1957) (Chen et al., 2020). Table 10 uses a structure that mirrors that of Table 9 to investigate whether our results are sensitive to the inclusion of great famine effects. The famine may affect survivors' preferences directly through a scarring effect from a negative shock. It would also affect preferences through a selection effect if the survivors, who were presumably healthier, have systematically different preferences than non-survivors. Column 1 of Table 10 shows that local famine severity is associated with significantly lower *risk aversion* and *equality vs. efficiency* and higher *negative reciprocity*. When including local famine severity as an additional control in our main specifications in the last four columns of Table 10, we find that our estimates are robust with respect to the great famine.[23]

The sent-down experience may significantly affect people's labor market outcomes, causing the observed changes in economic preferences and attitudes. To check the feasibility of this hypothesis, we investigate the effect of the sent-down experience on education and income. In our survey, we collect information on individual education and annual income.[24] Table 11 reports RD estimates

[23] To account for other potential confounding effects due to geographic differences, we have considered alternative specifications with provincial fixed effects in Appendix Table B.23. Our estimates are largely robust to these alternative specifications, though the standard errors for the effects of being sent-down on *positive reciprocity* and *trust government* are larger in the local quadratic specification with covariates.

[24] Education is measured by highest degree completed, which includes illiterate, elementary school, middle school, high school, some college, college graduate, and post graduate. Income is reported in six intervals, which are: less than 5000 RMB; 5,000-10,000 RMB; 10,000-50,000 RMB; 50,000-100,000 RMB; 100,000-500,000 RMB; and more than 500,000 RMB. In 2019, one RMB was approximately 0.145 U.S. dollars.

Table 8
Robustness check excluding individuals who experienced school suspensions.

Outcomes	Local linear		Local quadratic	
	(1)	(2)	(3)	(4)
Risk aversion	0.309**	0.290**	0.723***	0.509**
	(0.136)	(0.146)	(0.227)	(0.227)
Patience	-0.610***	-0.899***	-0.636*	-1.059***
	(0.203)	(0.225)	(0.342)	(0.387)
Positive reciprocity	0.823***	0.576***	-0.266	-0.150
	(0.222)	(0.224)	(0.386)	(0.390)
Negative reciprocity	-0.126	-0.259*	-0.542**	-0.722**
	(0.138)	(0.154)	(0.238)	(0.285)
Altruism	0.369**	0.352**	0.434**	0.568***
	(0.154)	(0.151)	(0.198)	(0.199)
Trust others' intentions	0.339*	1.037***	1.297***	1.667***
	(0.189)	(0.220)	(0.385)	(0.407)
Trust government	-0.318	0.058	-0.339	-0.312
	(0.219)	(0.219)	(0.315)	(0.316)
Trust media	0.815***	1.599***	1.552***	1.989***
	(0.256)	(0.309)	(0.486)	(0.531)
Redistribution preference	-0.827***	-0.793***	-0.330*	-0.421**
	(0.271)	(0.165)	(0.184)	(0.202)
Equality vs. efficiency	0.036	0.739***	0.946***	0.943**
	(0.159)	(0.271)	(0.360)	(0.381)
Selfishness	-0.919*	-0.588	0.036	-0.069
	(0.499)	(0.508)	(0.657)	(0.687)
Economic rationality	0.010***	0.002	-0.006***	-0.007***
	(0.002)	(0.002)	(0.002)	(0.002)
Covariates	no	yes	no	yes
Effective observations	354	354	354	354

Notes: The table presents RD IV estimates of the impact of sent-down on economic preferences excluding individuals who experienced school suspensions. In all specifications, we instrument sent-down using a dummy for birth date before the September 1, 1961 cutoff, and the bandwidth is 2 quarters before the cutoff and 10 quarters after the cutoff. Columns 1 and 3 use local linear and local quadratic RD specifications, respectively. Columns 2 and 4 add gender, minority status, and parental occupations as additional controls. We also report the first-stage coefficients on the birth cutoff dummy and F-statistics in all models. Numbers in the parentheses are standard errors clustered at the birth quarter level. ***, **, and * stand for significance at the 1%, 5%, and 10% level, respectively.

of the effects of sent-down on education and income. While the sent-down experience seems to have increased the probability of finishing high school and decreased the probability of going to college under the local quadratic specification, the results are not robust with respect to alternative specifications. We do not find significant effects of sent-down on individual income. In Table 12, we include education (columns 1–2), income (columns 3–4), and both (columns 5–6) as additional control variables in our main RD specifications and find that our estimates of the effects of the sent-down experience on economic preferences and attitudes are robust with respect to the inclusion of education and income.

4.3. Heterogeneous effects of the sent-down experience

In this section, we attempt to extend our analysis to see whether there are any differential effects of the sent-down experience across individuals. First, we explore gender differences. The harsh living and working conditions in most rural areas, the strenuous physical labor requirements, and the separation from family members for the sent-down youth may have been particularly difficult for young women. The first two columns of Table 13 report the regression discontinuity estimates of the effects of the sent-down experience on economic preferences and attitudes for females (column 1) and males (column 2), respectively. These estimates come from a local linear specification although results from a local quadratic specification are similar. Column 3 presents the p-values when we compare the differences between the estimates by gender. The results show that the sent-down experience generally has a larger impact on some economic preferences and attitudes of females. In particular, the sent-down experience has a large and statistically significant effect on females' *risk aversion* and *trust government* but has no effect on male's *risk aversion* or *trust government*, and these gender differences are statistically significant. The point estimates of the effects of sent-down on *positive reciprocity* and *redistribution preference* are both greater for females, although the differences are not statistically significant. The effects of sent-down on *altruism*, *equality vs. efficiency* and *selfishness* are statistically significant only for females, but the estimated gender differences are not statistically different from zero.

Table 9
Robustness check: effects of city violence.

Outcomes	OLS	Local linear		Local quadratic	
	(1)	(2)	(3)	(4)	(5)
Risk aversion	1.742	0.280**	0.295**	0.422***	0.459***
	(1.079)	(0.122)	(0.123)	(0.146)	(0.152)
Patience	1.814	-0.113	-0.208	-0.223	-0.368*
	(1.752)	(0.126)	(0.129)	(0.149)	(0.159)
Positive reciprocity	-4.690**	0.930***	0.742***	0.696***	0.439**
	(1.996)	(0.190)	(0.184)	(0.217)	(0.219)
Negative reciprocity	-0.304	-0.158	-0.151	-0.117	-0.111
	(1.174)	(0.113)	(0.112)	(0.130)	(0.133)
Altruism	-5.228**	0.255**	0.194	0.615***	0.601***
	(2.045)	(0.122)	(0.122)	(0.157)	(0.161)
Trust others' intentions	-0.413	-0.112	0.098	0.099	0.415**
	(2.319)	(0.160)	(0.159)	(0.174)	(0.183)
Trust government	-4.440*	-0.655***	-0.485***	-0.695***	-0.461**
	(2.338)	(0.178)	(0.171)	(0.209)	(0.201)
Trust media	2.356	-0.149	0.086	0.174	0.436**
	(2.387)	(0.157)	(0.156)	(0.181)	(0.191)
Redistribution preference	-5.837***	-0.770***	-0.732***	-0.804***	-0.746***
	(2.067)	(0.139)	(0.137)	(0.160)	(0.159)
Equality vs. efficiency	-0.719	-0.510**	-0.382*	-0.546**	-0.317
	(2.353)	(0.222)	(0.215)	(0.264)	(0.255)
Selfishness	1.358	-0.497*	-0.362	-1.199***	-1.047***
	(2.414)	(0.267)	(0.263)	(0.382)	(0.381)
Economic rationality	0.038	-0.000	-0.002	0.003	-0.001
	(0.096)	(0.004)	(0.003)	(0.004)	(0.004)
Covariates	no	no	yes	no	yes
Effective observations	867	867	867	867	867

Notes: This table investigates whether the estimated effects of the sent-down experience on economic preferences are affected by city violence. The sent-down experience is measured by a dummy on whether the individual was sent down during the forced rustication movement. City violence is constructed by dividing the number of victims during the Cultural Revolution, obtained from the China Political Events Dataset, 1966–1971 (Walder, 2017), by total population in each province in 1964. Column 1 reports estimated effects of city violence in one's province during the Cultural Revolution on the individual's economic preferences. In columns 2–5, we add city violence as an additional control variable in our RD regressions. In all specifications in columns 2–5, we instrument the sent-down experience using a dummy for birth date before the September 1, 1961 cutoff, and the bandwidth is 20 quarters. Columns 2 and 4 use local linear and local quadratic RD specifications, respectively. Columns 3 and 5 add gender, minority status, and parental occupations as additional controls. Numbers in the parentheses are standard errors clustered at the birth quarter level. ***, **, and * stand for significance at the 1%, 5%, and 10% level, respectively.

In the last three columns of Table 13, we examine whether the effects of the sent-down experience on economic preferences and attitudes vary among individuals from different family backgrounds. It is widely believed that children of cadres or well-connected families were likely less affected by the sent-down movement. They might have been able to find ways to escape from being sent down or to get sent to better locations (for example, places close to their home cities). In columns 4 and 5 of Table 13, we present the effects of the sent-down experience for individuals from privileged and non-privileged family backgrounds, respectively, where privileged family background refers to whether the individual's father or mother was a military officer or party leader. Using the same strategy we used to look for heterogenous gender effects, we report estimates from a local linear specification although results from a local quadratic specification are very similar. We find that the sent-down experience had significantly positive effects on *risk aversion*, *positive reciprocity* and *altruism* and significantly negative effects on *trust government*, *redistribution preference*, and *equality vs. efficiency* for individuals from non-privileged family backgrounds. However, for those from privileged family backgrounds, the effects of sent-down on *risk aversion*, *altruism*, *trust government*, and *equality vs. efficiency* are not statistically different from zero. The other notable difference is that the sent-down experience had made those from privileged family backgrounds less patient whereas it had no effect on those from non-privileged family backgrounds.

4.4. Results comparisons

We next compare our results to educational interventions designed to shape children's preferences and decisions. One line of research and associated policy strategies asks whether it is possible to remediate poor outcomes for low SES children through early childhood education. Long-term studies exploring improvements in cognitive, health and economic-preference outcomes resulting from specialized early childhood education programs include the Abecedarian Project and, in a larger and more recent study, the

Table 10
Robustness check: effects of great famine.

Outcomes	OLS	Local linear		Local quadratic	
	(1)	(2)	(3)	(4)	(5)
Risk aversion	-0.291***	0.276**	0.285**	0.408***	0.445***
	(0.098)	(0.122)	(0.124)	(0.146)	(0.153)
Patience	0.117	-0.121	-0.222*	-0.233	-0.386**
	(0.160)	(0.127)	(0.131)	(0.151)	(0.162)
Positive reciprocity	0.081	0.935***	0.760***	0.687***	0.434*
	(0.183)	(0.192)	(0.187)	(0.219)	(0.222)
Negative reciprocity	0.272**	-0.156	-0.151	-0.099	-0.094
	(0.107)	(0.113)	(0.113)	(0.128)	(0.131)
Altruism	0.257	0.268**	0.218*	0.636***	0.624***
	(0.187)	(0.121)	(0.122)	(0.156)	(0.161)
Trust others' intentions	-0.216	-0.122	0.081	0.076	0.390**
	(0.212)	(0.162)	(0.161)	(0.176)	(0.184)
Trust government	-0.062	-0.645***	-0.468***	-0.718***	-0.478**
	(0.214)	(0.181)	(0.175)	(0.214)	(0.207)
Trust media	-0.035	-0.159	0.053	0.169	0.428**
	(0.218)	(0.157)	(0.156)	(0.180)	(0.188)
Redistribution preference	-0.049	-0.755***	-0.706***	-0.813***	-0.748***
	(0.190)	(0.138)	(0.135)	(0.160)	(0.159)
Equality vs. efficiency	-0.653***	-0.518**	-0.402*	-0.602**	-0.380
	(0.214)	(0.215)	(0.210)	(0.259)	(0.252)
Selfishness	-0.175	-0.502*	-0.383	-1.222***	-1.072***
	(0.220)	(0.267)	(0.268)	(0.385)	(0.388)
Economic rationality	0.005	-0.000	-0.002	0.004	-0.000
	(0.009)	(0.003)	(0.004)	(0.004)	(0.004)
Covariates	no	no	yes	no	yes
Effective observations	867	867	867	867	867

Notes: This table investigates whether the estimated effects of the sent-down experience on economic preferences are affected by the great famine. The sent-down experience is measured by a dummy on whether the individual was sent down during the forced rustication movement. We define local famine severity as the ratio of the cohort size of the famine cohorts (1959–1961) over that of the non-famine cohorts (1955–1957) in one's province. Column 1 reports estimated effects of local famine severity on individual's economic preferences. In columns 2–5, we add local famine severity as an additional control variable in our RD regressions. In all specifications in columns 2–5, we instrument the sent-down experience using a dummy for birth date before the September 1, 1961 cutoff, and the bandwidth is 20 quarters. Columns 2 and 4 use local linear and local quadratic RD specifications, respectively. Columns 3 and 5 add gender, minority status, and parental occupations as additional controls. Numbers in the parentheses are standard errors clustered at the birth quarter level. ***, **, and * stand for significance at the 1%, 5%, and 10% level, respectively.

Chicago Heights Early Childhood Education Center (CHECC). While research on the "Marshmallow Test" suggests that children can learn to become more patient (Mischel and Baker, 1975; Murray et al., 2016), the CHECC program did not have a significant impact on patience (Andreoni et al., 2019), and we similarly find no robust effect of the sent-down movement on patience. Another CHECC study finds that students in the treatment group gave away similar amounts of money in the dictator game to those in the control group (Cappelen et al., 2020), in contrast to our result that being sent down increased altruism. Interestingly, however, an ultimatum game study of participants in the treatment group of the Abecedarian project conducted when they were in their 40s showed that they were more inequality-averse than controls, measured by an increase in rejections of advantageous offers (Luo et al., 2018). Note, however, that while the results above are for specialized daycare, more typical daycare programs may not affect the development of economic preferences (Cardim et al., 2022).

Other research focuses on interventions for students beyond pre-school. In a study of 7 to 9-year olds, Kosse et al. (2020) explore whether deficits in prosociality associated with low SES can be reduced by pairing students with a trained mentor who socially interacted with individual children roughly weekly for a year. They find that mentoring results in an increase of 25.8% of a standard deviation in a joint measure of prosociality that includes altruism, trust, and other-regarding behavior. By comparison, we find an increase in altruism (61.0% of a standard deviation), an increase in trust in others' intentions (41.2% of a standard deviation), and, in one of our other regarding behavior measures, a decrease in selfishness (105.7% of one standard deviation) with our results (Table 5, column 4). An experiment on financial literacy education for high school students found that certainty equivalents decreased by 46.3% of a standard deviation although there was no corresponding increase in patience (Sutter et al., 2020), compared to our result that risk aversion decreased by 45.8% of a standard deviation with no robust result on patience. Finally, Eckel et al. (2012) examine the effect of high school quality on risk preferences and find that students in schools with smaller class sizes are less risk averse, and that when schools have more teachers with advanced degrees students are less risk averse, compared to our finding that sent-down persons exhibit a 45.8% of a standard deviation decrease in risk aversion.

Table 11
Effects of the sent-down experience on education and income.

Outcomes	Local linear		Local quadratic	
	(1)	(2)	(3)	(4)
Education level				
Middle school and below	0.111	0.180	-0.198	-0.141
	(0.109)	(0.110)	(0.124)	(0.123)
High school	-0.063	-0.147	0.351***	0.281**
	(0.111)	(0.111)	(0.135)	(0.133)
College and above	-0.048*	-0.033	-0.153***	-0.140***
	(0.027)	(0.027)	(0.038)	(0.038)
Income level				
10,000 RMB and below	0.136	0.170	0.059	0.058
	(0.108)	(0.106)	(0.133)	(0.132)
10,000-100,000 RMB	-0.115	-0.147	0.013	0.022
	(0.111)	(0.106)	(0.139)	(0.135)
100,000 RMB and above	-0.021	-0.024	-0.072	-0.081*
	(0.035)	(0.034)	(0.048)	(0.048)
Covariates	no	yes	no	yes
Effective observations	867	867	867	867

Notes: The table presents RD IV estimates of the impact of the sent-down experience on education and income. The sent-down experience is measured by a dummy on whether the individual was sent down during the forced rustication movement. In all specifications, we instrument the sent-down experience using a dummy for birth date before the September 1, 1961 cutoff, and the bandwidth is 20 quarters. Columns 1 and 3 use local linear and local quadratic RD specifications, respectively. Columns 2 and 4 add gender, minority status, and parental occupations as additional controls. Numbers in the parentheses are standard errors clustered at the birth quarter level. ***, **, and * stand for significance at the 1%, 5%, and 10% level, respectively.

Overall we find consistency in the direction and (generally) the magnitude of the effects of the sent-down movement with educational interventions on economic preferences.

4.5. Potential mechanisms

The sent-down experience had a profound impact on the lives of the sent-down youth. It significantly changed people's economic preferences and attitudes, making people more risk averse and altruistic as well as more willing to return others' kindness. At the same time they are less likely to trust the government and support income redistribution policy. Below we sketch some channels through which being sent down might affect specific preferences. We do not have information on sent-down youths' individual experiences such as their occupations, job intensity, living or working conditions, or social networks, therefore, it is not possible for us to directly test for these potential mechanisms. In what follows we propose possible mechanisms and support our analysis with mostly others' research results.

Risk aversion. There are two mechanisms through which the sent-down movement may have affected people's risk aversion. The first is financial insecurity. Poverty causes stress and negative affective states which in turn may lead to increased risk aversion (Haushofer and Fehr, 2014).Tanaka et al. (2010b) found that people living in poorer villages in Vietnam were more risk- and loss-averse. Malmendier and Nagel (2011) show that exposure to economic crises (the Great Depression) caused people in the United States to become more risk averse. The second is exposure to trauma (Callen et al., 2014; Kim and Lee, 2014). As mentioned in Section 2, the sent-down youth were separated from their families, lived in unfamiliar surroundings, and performed hard labor in extreme conditions, all of which could have led to experiencing trauma. Some of the heterogeneous effects presented in Table 13 are consistent with the potential channels that affect risk aversion. For example, we find that the sent-down experience has a larger effect on females' risk aversion than on males' risk aversion. The difference may be driven by the fact that the sent-down experience was more stressful and traumatic for young women, particularly in terms of personal safety, marriage, and childbearing.

Time preference. Poverty and stress also affect time preferences. Lawrance (1991) and Haushofer and Fehr (2014) respectively use empirical and experimental methods to show that poverty can make people more impatient. Furthermore, Cassar et al. (2017) and Voors et al. (2011) demonstrate that negative changes in the environment (both natural disasters and man-made conflicts) lead to greater impatience. As with risk aversion, increased impatience is linked to the experience of difficult or stressful events. Thus, the link between being sent-down and increased impatience observed in our data may reflect the stressful nature of the experience, even though the estimated effects are statistically insignificant in some specifications.

Altruism. The sent-down movement may make people more altruistic through the following four mechanisms: First, experiencing economic hardship is linked to greater empathy, which in turn makes people more altruistic (Hartman and Morse, 2020). Second,

Table 12
Robustness checks: effects of education and income.

Outcomes	Include education		Include income		Include both	
	Local linear (1)	Local quadratic (2)	Local linear (3)	Local quadratic (4)	Local linear (5)	Local quadratic (6)
Risk aversion	0.294**	0.476***	0.324**	0.487***	0.325***	0.492***
	(0.124)	(0.154)	(0.126)	(0.153)	(0.125)	(0.153)
Patience	-0.183	-0.296*	-0.225*	-0.376**	-0.194	-0.308**
	(0.130)	(0.156)	(0.132)	(0.160)	(0.130)	(0.156)
Positive reciprocity	0.746***	0.505**	0.771***	0.440**	0.753***	0.498**
	(0.187)	(0.220)	(0.190)	(0.224)	(0.190)	(0.222)
Negative reciprocity	-0.134	-0.119	-0.152	-0.106	-0.132	-0.116
	(0.113)	(0.134)	(0.115)	(0.135)	(0.114)	(0.135)
Altruism	0.225*	0.574***	0.265**	0.615***	0.276**	0.582***
	(0.123)	(0.157)	(0.123)	(0.157)	(0.123)	(0.153)
Trust others' intentions	0.064	0.428**	0.088	0.372**	0.069	0.406**
	(0.160)	(0.184)	(0.164)	(0.185)	(0.162)	(0.184)
Trust government	-0.482***	-0.498**	-0.461***	-0.526***	-0.475***	-0.533***
	(0.176)	(0.207)	(0.172)	(0.201)	(0.172)	(0.200)
Trust media	0.037	0.464**	0.079	0.432**	0.061	0.468**
	(0.156)	(0.189)	(0.157)	(0.185)	(0.157)	(0.186)
Redistribution preference	-0.726***	-0.790***	-0.700***	-0.767***	-0.718***	-0.801***
	(0.137)	(0.163)	(0.138)	(0.163)	(0.139)	(0.165)
Equality vs. efficiency	-0.398*	-0.278	-0.386*	-0.347	-0.397*	-0.296
	(0.217)	(0.253)	(0.220)	(0.260)	(0.220)	(0.254)
Selfishness	-0.480*	-1.026***	-0.483*	-1.128***	-0.571**	-1.066***
	(0.268)	(0.379)	(0.255)	(0.359)	(0.252)	(0.345)
Economic rationality	-0.003	0.000	-0.003	-0.002	-0.003	-0.000
	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Covariates	yes	yes	yes	yes	yes	yes
Effective observations	867	867	867	867	867	867

Notes: This table investigates whether the estimated effects of the sent-down experience on economic preferences are affected by education and income. The sent-down experience is measured by a dummy on whether the individual was sent down during the forced rustication movement. We instrument the sent-down experience using a dummy for birth date before the September 1, 1961 cutoff, and the bandwidth is 20 quarters. All columns have gender, minority status and parental occupations as controls. Columns 1 and 2 include dummies on education levels as additional controls. Columns 3 and 4 include dummies on income levels as additional controls. Columns 5 and 6 include both education and income controls. Numbers in the parentheses are standard errors clustered at the birth quarter level. ***, **, and * stand for significance at the 1%, 5%, and 10% level, respectively.

being friends with poor farmers also makes people more altruistic (Rao, 2019). Third, the Chinese government repeatedly promoted increasing altruism as a goal of the sent-down movement. Alesina and La Ferrara (2005), using data from East and West Germany, show that this kind of propaganda can effectively change people's preferences. Finally, the extent to which everyday economic production activities are cooperative is associated with greater generosity towards others (Henrich et al., 2001).

Reciprocity. Sent-down youth frequently worked as teachers, technicians, or physicians while living in rural areas. In doing so, they might have experienced kindness and respect from the local people, which in turn may have made them more willing to return this kindness. Moreover, positive reciprocity can also induce more group loyalty, which helps people survive in hard times (Simon, 1993). The positive effect of the sent-down movement on reciprocity may be linked to the kindness experienced by the sent-down youth from people outside their normal social group, and to the group loyalty (perhaps with other sent-down youth) resulting from shared hardship. Other research links communism with increased reciprocity in Vietnam (Tanaka et al., 2010a) which supports the notion that our results may have resulted from separating youth from urban capitalist ideology.

Trust. Poverty and trust are mutually reinforcing. A lack of trust leads to poverty, and poor living conditions lead to reduced trust (Farah and Hook, 2017). In addition, negative life experiences tend to also reduce individuals' trust in others (Cassar et al., 2017; Bauer, 2015). Similarly, trust in the government constitutes a form of social capital. A decrease in governmental trust can have negative effects on the effective functioning of society (Keele, 2007). Negative memories associated with the government can undermine trust in it (Chanley et al., 2000).

Support for redistribution. Individuals who benefit from redistributive policies tend to further support such policies. In contrast, those who incur losses under redistributive measures, such as wealthy individuals facing higher tax rates or Chinese landlords who were dispossessed of part of their property during the socialist revolution, are more inclined to oppose all forms of redistribution, even those that do not affect them or could potentially benefit them (Chen and Yang, 2019). The sent-down movement had redistributive effects, decreasing the lifetime income of sent-down youth while increasing the welfare of poor, rural Chinese farmers. These negative effects of redistribution policy on the sent-down youth are consistent with their relative lack of support for redistributive policies.

Table 13
Heterogeneous effects by gender and family background.

	Gender			Family background		
	Female (1)	Male (2)	p-value (3)	Privileged (4)	Non-privileged (5)	p-value (6)
Risk aversion	0.606***	-0.007	0.012**	0.191	0.330**	0.656
	(0.200)	(0.126)		(0.288)	(0.140)	
Patience	-0.327*	-0.053	0.249	-1.031***	-0.018	0.002***
	(0.175)	(0.158)		(0.313)	(0.144)	
Positive reciprocity	0.966***	0.588***	0.266	1.004**	0.719***	0.566
	(0.281)	(0.176)		(0.500)	(0.217)	
Negative reciprocity	-0.116	-0.154	0.864	-0.233	-0.126	0.699
	(0.186)	(0.110)		(0.232)	(0.127)	
Altruism	0.295*	0.166	0.572	-0.473	0.329**	0.018**
	(0.165)	(0.156)		(0.389)	(0.140)	
Trust others' intentions	0.144	0.166	0.938	-0.674	0.244	0.034*
	(0.224)	(0.163)		(0.470)	(0.184)	
Trust government	-1.118***	0.196	0.000***	-0.520	-0.506**	0.975
	(0.289)	(0.225)		(0.376)	(0.203)	
Trust media	0.145	-0.014	0.572	-0.111	0.116	0.563
	(0.208)	(0.186)		(0.376)	(0.174)	
Redistribution preference	-0.758***	-0.594***	0.542	-0.708*	-0.707***	0.998
	(0.209)	(0.162)		(0.406)	(0.149)	
Equality vs. Efficiency	-0.471*	0.015	0.173	-0.042	-0.445*	0.454
	(0.273)	(0.221)		(0.470)	(0.245)	
Selfishness	-0.733*	-0.024	0.169	-0.157	-0.500	0.642
	(0.384)	(0.336)		(0.828)	(0.308)	
Economic rationality	-0.012**	0.006	0.011**	-0.005	-0.002	0.756
	(0.005)	(0.005)		(0.011)	(0.004)	
Covariates	yes	yes		yes	yes	
Effective observations	456	411		178	689	

Notes: This table investigates the heterogeneous effects of the sent-down experience on economic preferences by gender and by family background. The sent-down experience is measured by a dummy on whether the individual was sent down during the forced rustication movement. We instrument the sent-down experience using a dummy for birth date before the September 1, 1961 cutoff, and the bandwidth is 20 quarters. Privileged family background refers to either the individual's father or mother was a military officer or party leader. Columns 1–2 use local linear RD specifications and add minority status and parental occupations as controls; columns 4–5 use local linear RD specifications and add gender and minority status as controls. Columns 3 and 6 present the p-values when we compare the differences between the estimates by gender and by family background, respectively. Numbers in the parentheses are standard errors clustered at the birth quarter level. ***, **, and * stand for significance at the 1%, 5%, and 10% level, respectively.

5. Conclusion

During the sent-down movement approximately 17 million urban youth left their homes to spend several years living and working in rural areas. Goals of the movement included solving urban unemployment and developing rural areas, as well as re-educating citizens to have collectivist values consistent with Marxist ideology and communist principles. That the re-education took place during late adolescence and early adulthood is important since that is the time of life when it is easiest to influence the development of beliefs and values. This paper uses the sent-down movement in China as a natural experiment to study the impact of a policy that sought to change people's preferences. Our data was obtained by conducting a web-based survey of over 1800 participants to collect information on economic preferences and attitudes. We then take advantage of Chinese school-entry age requirements and the sudden end of the sent-down movement to compare the economic preferences and attitudes of those just above the age cutoff who were affected by the sent-down movement with those slightly younger individuals who were just below the age cutoff. We use a fuzzy regression discontinuity design to avoid any statistical bias caused by non-random assignment into the sent-down program.

Our results show that the sent-down experience significantly changes economic preferences and attitudes that are fundamental to decision making. It made program participants more risk averse and altruistic. Sent-down individuals are more willing to return others' kindness. While some of the outcomes were in line with program goals, others were not. We find that people who were sent down are less likely to trust the government and support economic redistribution policy. The effects on economic preferences and attitudes are strong and significant. Whether the program was ultimately successful in achieving its goal of developing more desirable values among urban youth is beyond the scope of this research.

Our work adds to the literature that shows cultural, political and macroeconomic experiences matter in shaping economic preferences and attitudes. Importantly, we present an example of a government policy that has a consequential effect on economic preferences and attitudes decades after the program was suspended. Additionally, while traditional wisdom is that public policies

have an important impact only on the external world, our results show that a government policy may influence citizens' decision making, and that the effects may last for decades. While our findings may capture the compound effect of the sent-down movement, including indirect channels such as altered life-courses, our results are robust to controlling for individual education and income, pointing to a likely direct and persistent effect from the experience of being sent down itself. This suggests that before initiating new policies, governments need to carefully consider the unintended consequences, both good and bad, that may occur in the short and long run. One example of these effects comes from military conscription, which affects earnings and employment (Angrist et al., 2011; Siminski, 2013) and the likelihood of developing a criminal record (Galiani et al., 2011). This study constitutes a case study of an extreme government policy enacted in a single country, but the fundamental forces that shape economic preferences and attitudes are likely to be similar. Whether the impacts of government policy and adolescent experience identified in the context of China's sent-down movement can help explain the formation of preferences responding to different types of government policies, such as mandatory conscription, or preferences in other countries remains an important topic for future research.

Data availability

Data will be made available on request.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

The authors wish to acknowledge helpful comments from both editors and anonymous referees. Xiaomeng Zhang acknowledges financial support from the National Natural Science Foundation of China (Grant No. 72203101, 72371165, and 72373069) and Wei Wang acknowledges financial support from the National Natural Science Foundation of China (Grant No. 72250710170).

Appendix A. Description of our survey data

Our survey is a comprehensive preferences survey in China. To measure economic preferences important to understanding economic behavior, we utilize the Global Preferences Survey (GPS), a validated instrument which measures both individual preferences (time preference, risk aversion) and social preferences (trust, altruism, positive reciprocity, and negative reciprocity) (Falk et al., 2015, 2018). The survey for each preference measure consists of one or more qualitative questions (e.g., "Please tell me, in general, how willing or unwilling you are to take risks.") and one or more quantitative questions or choice tasks (e.g., What would you prefer: a draw with a 50 percent chance of receiving 300 Yuan, and the same 50 percent chance of receiving nothing, or the amount of 160 Yuan as a sure payment?"). A single index for each preference measure is determined by weighting responses based on weights established by the original GPS model validation procedure (Falk et al., 2015). We include a question on trusting government from the Chinese General Social Survey (CGSS) and a self-designed question on trust media as complements to the GPS question on trusting others. Additionally, since economic equality is a communist value, we added an income redistribution question about how much individuals with earnings in the top 1% should be taxed to measure redistribution preference as well as a question on whether economic growth or equality is a more important priority to measure preference on equality versus efficiency. Our survey also includes the economic rationality task from Andreoni and Miller (2002).

The following provides greater detail on our survey questions and variable construction.

1 Questions on risk aversion, patience, positive and negative reciprocity, altruism and trust others are taken from the Global Preferences Survey (Falk et al., 2015), a survey measurement tool that is validated against data from incentivized laboratory experiments. Variables are constructed following the original study procedures. All of the preferences scores were z-scored to a standard normal distribution. We adopted the Chinese version of the GPS, in which the questions were translated into Chinese and the currency was Chinese Yuan (RMB).
2 Selfishness and economic rationality are measured using a hypothetical, modified dictator game from Andreoni and Miller (2002), where participants make a number of choices about how to divide money between themselves and a charity. Each participant answered 11 questions, each concerning a different budget set that varied in the amount to be divided and the slope of the budget. We use their decision to estimate a CES utility model, which is $U_s = (\alpha\pi_s^{\rho} + (1-\alpha)\pi_o^{\rho})^{\frac{1}{\rho}}$, where $0 < \alpha < 1$ measures selfishness. The selfishness parameter estimates were z-scored. We use the Critical Cost Efficiency Index (CCEI) to measure the severity of GARP violations and use that as a measure of rationality. We use the same tokens as the original tasks used. The tokens' values were converted to RMB according to the 2018 exchange rate between the US Dollar and Chinese Yuan.
3 Trust government is measured using the question from the Chinese General Social Survey "I assume government is trustworthy." Participants responded by selecting an integer from 1 to 10, where 1 means "totally agree" and 10 means "totally disagree." The data were z-scored.
4 We created the trust media question "I assume that the media is trustworthy." Participants responded by selecting an integer from 1 to 10, where 1 means "totally agree" and 10 means "totally disagree." The data were z-scored.

Table A.14
Descriptions of preference measures in our survey.

Preferences	Weight*	Source
Risk Aversion		
Lottery choice task	0.53	GPS
Qualitative survey question	0.47	GPS
Patience		
Inter-temporal choice task	0.71	GPS
Qualitative survey question	0.29	GPS
Positive reciprocity		
Gift exchange task	0.52	GPS
Qualitative survey question	0.48	GPS
Negative reciprocity		
Qualitative survey question	1	GPS
Altruism		
Altruism task	0.54	GPS
Qualitative survey question	0.46	GPS
Trust others' intention		
Qualitative survey question	1	GPS
Trust government		
Qualitative survey question	1	CGSS
Trust media		
Qualitative survey question	1	Our own question
Redistribution preference		
Qualitative survey question	1	Our own question
Preference on equality vs. efficiency		
Qualitative survey question	1	Our own question
Selfishness		
Modified dictator game	1	Andreoni and Miller (2002)
Economic rationality		
Modified dictator game	1	Andreoni and Miller (2002)

Notes: Our survey was designed by Virginia Tech Economics Lab and conducted using the Sojump online platform in 2019. * To measure economic preferences important to understanding economic behavior, we employ questions from the Global Preferences Survey (GPS), a validated instrument which measures both individual preferences (time preference, risk aversion) and social preferences (trust, altruism, positive reciprocity, and negative reciprocity (Falk et al., 2015, 2018). The survey for each preference measure consists of one or more qualitative questions (e.g., "Please tell me, in general, how willing or unwilling you are to take risks.") and one or more quantitative questions or choice tasks (e.g., "What would you prefer: a draw with a 50 percent chance of receiving 300 Yuan, and the same 50 percent chance of receiving nothing, or the amount of 160 Yuan as a sure payment?"). A single index for each preference measure is determined by weighting responses based on weights established by the original GPS model validation procedure (Falk et al., 2015).

5 To measure redistribution preferences we asked participants "How much do you think each of the following groups should pay as a percentage of their total income" for the top 1%, the top 9%, the bottom 9% and the bottom 1%. In creating our variable we used only answers about tax rates for the top 1%, then z-scored them.

6 To measure attitudes toward equity vs. efficiency, we used the question "how would you place your views on the following scale?" (1 = you agree completely with Statement A; 10 = you agree completely with Statement B)
- Statement A: Fast economic growth should be of high priority, even if doing so can lead to increasing inequality.
- Statement B: Equality should be of high priority, even if doing so can lead to slower economic growth.

and z-scored the response.

7 Participants answered 17 demographic questions covering gender, birth date, income, education, whether their current residence is more urban or rural, ethnicity, religion, province, Hukou status now and for their place of birth, occupation of the respondent and both parents, whether the respondent was sent down to the countryside during the Cultural Revolution, and if so, for how long and where, and whether the respondent was an only child.

A summary description of all the economic preference variables in our survey is presented in Table A.14. The complete survey questions related to the economic preference variables in Chinese and an English translation are listed in Table A.15.

Table A.15
Language used in our survey questions.

Preference	English	Chinese
Risk 1 (GPS)	Please imagine the following situation: You can choose between a sure payment of a particular amount of money, OR a draw, where you would have an equal chance of getting 300 RMB or getting nothing. We will present to you five different situations.	请设想下述情况: 有一笔特定金额的报酬; 还有一个抽奖，要么能得到 300 元，要么什么也得不到，机会均等。您可以在报酬和抽奖这两者之中选一样。我们会为您展示 5 种不同的情况。
Risk 2 (GPS)	Please tell me, in general, how willing or unwilling you are to take risks, using a scale from 0 to 10, where 0 means you are "completely unwilling to take risks" and 10 means you are "very willing to take risks." You can also use any number between 0 and 10 to indicate where you fall on the scale, using 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10.	请告诉我，从整体上，您有多愿意或多么不愿意承担风险? 请用 10 分制评分标准来评价，0 表示您'' 完全 不愿意承担风险''，10 表示您'' 非常愿意承担风险''，您也可以用 0 到 10 之间的任意一个数字，即用 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 来回答。
Patience 1 (GPS)	Suppose you were given the choice between receiving a payment today or a payment in 12 months. We will now present to you five situations. The payment today is the same in each of these situations. The payment in 12 months is different in every situation. For each of these situations, we would like to know which you would choose. Please assume there is no inflation, i.e. future prices are the same as today's prices.	假设您可以在两个选项里选一个，今天收到报酬，或在 12 个月内收到报酬。下面我们会为您展示 5 种情况。在每种情况中，今天收到的报酬，金额都是一样的; 但 12 个月内收到的报酬，金额都是不 同的。我们想知道，对于每种情况，您会如何选择。请假设不存在通货膨胀，即，将来的金额与今天 的金额，价值一样。
Patience 2 (GPS)	How well does each of the following statements describe you as a person? Please indicate your answer on a scale from 0 to 10. A 0 means "does not describe me at all," and a 10 means "describes me perfectly." You can use any number between 0 and 10 to indicate where you fall on the scale, using 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10. A. When someone does me a favor, I am willing to return it.	以下关于您个人的各项陈述，描述得如何? 请用 10 分制评分标准来评价，0 表示'' 完全不同意''，10 表示 '' 完全同意''，您可以用 0 到 10 之间的任意一个数字，即用 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 来回答。您有多愿意放弃眼前利益，从中获得更多的长远利益?
Pos. rec.1 (GPS)	Please think about what you would do in the following situation. You are in an area you are not familiar with, and you realize that you lost your way. You ask a stranger for directions. The stranger offers to take you to your destination. Helping you costs the stranger about 16 RMB in total. However, the stranger says he or she does not want any money from you. You have six presents with you. The cheapest present costs 4 RMB, the most expensive one costs 24 RMB. Do you give one of the presents to the stranger as a "thank you" gift? (If yes) Which present do you give to the stranger?	请想一下，如果遇到下述情况，您会怎么做。您在一个不熟悉的地方，发现自己迷路了。您向一个陌生 人问路。这个陌生人提出带您去您的目的地。为了帮您，陌生人总共大约花了 16 元。然而，陌生人说他或她不想要您任何钱。您随身带着 6 个礼物。最便宜的礼物，价值 4 元; 最贵的礼物，价值 24 元。您会把其中的一个礼物送给陌生人，表示感谢吗? (如果会:) 您会把哪个礼物送给陌生人?
Pos. rec.2 (GPS)	How well does each of the following statements describe you as a person? Please indicate your answer on a scale from 0 to 10. A 0 means "does not describe me at all," and a 10 means "describes me perfectly." You can use any number between 0 and 10 to indicate where you fall on the scale, using 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10. When someone does me a favor, I am willing to return it.	以下关于您个人的各项陈述，描述得如何? 请用 10 分制评分标准来评价，0 表示'' 完全不同意''，10 表示 '' 完全同意''，您可以用 0 到 10 之间的任意一个数字，即用 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 来回答。别人帮助您，您很愿意 作出回报。
Neg. rec. (GPS)	We now ask you for your willingness to act in a certain way. Please again indicate your answer on a scale from 0 to 10. A 0 means "completely unwilling to do so," and a 10 means "very willing to do so." You can also use any number between 0 and 10 to indicate where you fall on the scale, using 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10. A. How willing are you to punish someone who treats you unfairly, even if there may be costs for you? B. How willing are you to punish someone who treats others unfairly, even if there may be costs for you?	下面我们来问一下您愿意以某种方式行事的意愿程度。请再一次用 10 分制评分标准来评价，0 表示您'' 完 全不愿意这么做''，10 表示您'' 非常愿意这么做''，您也可以用 0 到 10 之间的任意一个数字，即用 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 来回答。A. 您有多愿意惩罚那些 对您不公正的人，即 使可能要您付出代价? B. 您有多愿意惩罚那些 对别人不公正的人，即使可能要您付出代 价?
Altruism 1 (GPS)	Imagine the following situation: Today you unexpectedly received 800 RMB. How much of this amount would you donate to a good cause? (Values between 0 and 800 are allowed)	想像一下下述情况: 今天您意外地收到 800 元。您会把这笔钱中的多少金额进行慈善捐赠? (允许 0 到 800 之间的金额)。
Altruism 2 (GPS)	We now ask you for your willingness to act in a certain way. Please again indicate your answer on a scale from 0 to 10. A 0 means "completely unwilling to do so," and a 10 means "very willing to do so." You can also use any number between 0 and 10 to indicate where you fall on the scale, using 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10. How willing are you to give to good causes without expecting anything in return?	下面我们来问一下您愿意以某种方式行事的意愿程度。请再一次用 10 分制评分标准来评价，0 表示您'' 完 全不愿意这么做''，10 表示您'' 非常愿意这么做''，您也可以用 0 到 10 之间的任意一个数字，即用 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 来回答。您有多愿意进行慈善 捐赠，而不期待任何 回报?
Trust others' intention (GPS)	How well does each of the following statements describe you as a person? Please indicate your answer on a scale from 0 to 10. A 0 means "does not describe me at all," and a 10 means "describes me perfectly." You can use any number between 0 and 10 to indicate where you fall on the scale, using 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10. I assume that people have only the best intentions.	以下关于您个人的各项陈述，描述得如何? 请用 10 分制评分标准来评价，0 表示'' 完全不同意''，10 表示 '' 完全同意''，您可以用 0 到 10 之间的任意一个数字，即用 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 来回答。您认为人们都是心存好 意的。

Table A.15
Continued...

Preference	English	Chinese
Trust government (CGSS)	How well does each of the following statements describe you as a person? Please indicate your answer on a scale from 0 to 10. A 0 means "does not describe me at all," and a 10 means "describes me perfectly." You can use any number between 0 and 10 to indicate where you fall on the scale, using 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10. I believe government is very trustworthy.	以下关于您个人的各项陈述，描述得如何？请用 10 分制评分标准来评价，0 表示" 完全不同意"，10 表示 " 完全同意"，您可以用 0 到 10 之间的任意一个数字，即用 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 来回答。您认为政府是很值得信任的。
Trust media (Our Own)	How well does each of the following statements describe you as a person? Please indicate your answer on a scale from 0 to 10. A 0 means "does not describe me at all," and a 10 means "describes me perfectly." You can use any number between 0 and 10 to indicate where you fall on the scale, using 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10. I assume that media is trustworthy.	以下关于您个人的各项陈述，描述得如何？请用 10 分制评分标准来评价，0 表示" 完全不同意"，10 表示 " 完全同意"，您可以用 0 到 10 之间的任意一个数字，即用 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 来回答。您认为媒体是值得信任的。
Redistri-bution preference (Our Own)	What percentage of their income do you think the wealthiest 1% of the population should contribute in taxes?	您认为以下最富裕的 1%d 的人口应该拿出他们的百分之多少的收入去交税。
Equality vs. efficiency (Our Own)	How would you place your views on the following scale? (1 = you agree completely with Statement A; 10 = you agree completely with Statement B) Statement A: Fast economic growth should be of high priority, even if doing so can lead to increasing inequality. Statement B: Equality should be of high priority, even if doing so can lead to slower economic growth.	在以下两个思想中选择您的同意程度（1= 完全同意思想 A，10= 完全同意 B）思想 A: 快速的经济增长应该被放在首位，即使收入不平均会增加。思想 B: 收入平等应该被放在首位，即使增长速度会放慢。
Selfish & CCEI (A & M)	Now suppose you have 40 tokens. Please choose a number of tokens to keep. The rest will be passed to another person. The tokens you keep are worth 3 RMB each to you, and the tokens you pass are worth 1 RMB to others. How many tokens would you like to keep?	现在，你有 40 个筹码，你可以选择一定数量的筹码归自己所有，其他的给予他人。每一个你自己留下的筹码，每个可以兑换 3 元人民币，你给他人的筹码，他人可以用每个兑换 1 元人民币。你会留下多少?

Appendix B. Additional tables

Table B.16
Comparison of effective sample with China family panel studies (CFPS) data.

	Effective sample		CFPS		Unpaired *t* test	
	Mean (1)	SD (2)	Mean (3)	SD (4)	Diff. (5)	*p*-value (6)
Age	58.09	2.614	58.10	2.853	-0.010	0.935
Female(%)	52.60	49.96	52.09	49.98	0.510	0.820
Minority(%)	7.26	25.97	2.90	16.80	4.36	0.001
Probability of being sent down(%)	19.95	39.99	16.40	37.04	3.550	0.039
Father's occupation (%)						
Workers and peasants	69.67	46.00	69.46	46.09	0.21	0.927
Leaders and military officers	8.65	28.13	7.57	26.47	1.08	0.431
Professionals and businessmen	11.15	31.48	7.84	26.89	3.31	0.025
Others	10.15	30.22	15.14	35.86	-4.99	0.003
Mother's occupation (%)						
Workers and peasants	48.21	50.00	49.05	50.03	-0.84	0.742
Leaders and military officers	13.38	34.06	9.32	29.09	4.06	0.013
Professionals and businessmen	10.15	30.22	6.55	24.76	3.60	0.012
Others	28.26	45.05	35.08	47.76	-6.82	0.004
No. of observations	867		1,171			

Notes: This table presents a comparison of demographic characteristics between our effective sample and the China Family Panel Studies (CFPS) data for individuals in the same age group (Institute of Social Science Survey, 2015). Since the CFPS data were collected in 2010, we recalculated participants' ages to correspond to their ages in 2019, when we conducted our data collection.

Table B.17
OLS estimates.

Outcomes	OLS		Control Mean
	(1)	(2)	(3)
Risk aversion	-0.031	-0.001	0.071
	(0.035)	(0.037)	
Patience	0.327***	0.200***	-0.032
	(0.056)	(0.058)	
Positive reciprocity	0.440***	0.266***	-0.243
	(0.063)	(0.065)	
Negative reciprocity	0.110***	0.113***	-0.021
	(0.038)	(0.040)	
Altruism	0.381***	0.162**	-0.063
	(0.066)	(0.066))	
Trust others' intentions	0.442***	0.056	-0.350
	(0.074)	(0.066)	
Trust government	0.450***	0.080	-0.375
	(0.075)	(0.068)	
Trust media	0.445***	0.073	-0.359
	(0.076)	(0.070)	
Redistribution preference	0.342***	0.149**	-0.144
	(0.067)	(0.068)	
Equality vs. efficiency	0.242***	0.082	-0.180
	(0.076)	(0.079)	
Selfishness	-0.099	0.023	0.057
	(0.078)	(0.082)	
Economic rationality	-0.002	-0.002	0.986
	(0.003)	(0.003)	
Covariates	no	yes	
Effective observations	867	867	

Notes: The table presents OLS estimates of the impact of the sent-down experience on economic preferences. Column 2 includes gender, minority status, and parental occupations as control variables. Control mean denotes the mean values of the variables for people that were sent down. Numbers in the parentheses are standard errors clustered at the birth quarter level. ***, **, and * stand for significance at the 1%, 5%, and 10% level, respectively.

Table B.18
Estimated values of κ_2.

Outcomes	Local linear		Local quadratic linear term		quadratic term	
	(1)	(2)	(3)	(4)	(5)	(6)
Risk aversion	-0.003	-0.002	-0.006	-0.005	0.001	0.001
	(0.003)	(0.003)	(0.009)	(0.009)	(0.001)	(0.001)
Patience	0.030***	0.031***	0.006	0.010	0.001	0.001
	(0.004)	(0.004)	(0.013)	(0.013)	(0.001)	(0.001)
Positive reciprocity	0.011**	0.012***	-0.004	0.003	0.001	-0.001
	(0.005)	(0.005)	(0.015)	(0.015)	(0.001)	(0.001)
Negative reciprocity	0.006**	0.006*	-0.007	-0.006	0.001*	0.001*
	(0.003)	(0.003)	(0.009)	(0.009)	(0.001)	(0.001)
Altruism	0.025***	0.026***	-0.006	-0.002	0.001	0.001
	(0.005)	(0.005)	(0.015)	(0.015)	(0.001)	(0.001)
Trust others' intentions	0.031***	0.029***	0.032*	0.027*	-0.001	-0.001
	(0.005)	(0.005)	(0.015)	(0.015)	(0.001)	(0.001)
Trust government	0.048***	0.046***	0.057***	0.053***	-0.001**	-0.001**
	(0.005)	(0.005)	(0.016)	(0.015)	(0.001)	(0.001)
Trust media	0.048***	0.046***	0.048***	0.041***	-0.001*	-0.001
	(0.005)	(0.005)	(0.015)	(0.015)	(0.001)	(0.001)
Redistribution preference	0.040***	0.039***	0.023	0.023	0.001	0.001
	(0.005)	(0.005)	(0.015)	(0.015)	(0.001)	(0.001)
Equality vs. efficiency	0.024***	0.023***	0.050**	0.046**	-0.001*	-0.001
	(0.006)	(0.006)	(0.018)	(0.019)	(0.001)	(0.001)
Selfishness	-0.005	-0.007	-0.010	0.005	-0.001	-0.001
	(0.006)	(0.006)	(0.019)	(0.019)	(0.001)	(0.001)
Economic rationality	-0.001***	-0.001***	-0.002**	-0.002**	0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Covariates	no	yes	no	yes	no	yes

Notes: This table reports κ_2 in Eq. (2). The main independent variable is a dummy for whether an individual is sent-down. ***, **, and * stand for significance at the 1%, 5%, and 10% level, respectively.

Table B.19
Baseline estimates, with FDR-sharpened *q*-values.

Outcomes	Local linear		Local quadratic	
	(1)	(2)	(3)	(4)
Risk aversion	0.278	0.289	0.422	0.458
p-value	(0.023)	(0.020)	(0.004)	(0.003)
FDR-sharpened q-value	[0.044]	[0.048]	[0.005]	[0.011]
Patience	-0.119	-0.219	-0.224	-0.373
p-value	(0.349)	(0.094)	(0.136)	(0.020)
FDR-sharpened q-value	[0.212]	[0.121]	[0.093]	[0.028]
Positive reciprocity	0.936	0.762	0.677	0.445
p-value	(0.000)	(0.000)	(0.001)	(0.043)
FDR-sharpened q-value	[0.001]	[0.001]	[0.003]	[0.040]
Negative reciprocity	-0.159	-0.156	-0.117	0.113
p-value	(0.160)	(0.170)	(0.367)	(0.398)
FDR-sharpened q-value	[0.122]	[0.179]	[0.212]	[0.122]
Altruism	0.265	0.214	0.615	0.610
p-value	(0.030)	(0.079)	(0.000)	(0.000)
FDR-sharpened q-value	[0.048]	[0.118]	[0.001]	[0.001]
Trust others' intentions	-0.118	0.087	0.098	0.412
p-value	(0.465)	(0.590)	(0.574)	(0.025)
FDR-sharpened q-value	[0.269]	[0.294]	[0.257]	[0.028]
Trust government	-0.641	-0.461	-0.694	-0.452
p-value	(0.000)	(0.008)	(0.001)	(0.027)
FDR-sharpened q-value	[0.001]	[0.028]	[0.003]	[0.028]
Trust media	-0.158	0.054	0.173	0.426
p-value	(0.313)	(0.732)	(0.334)	(0.023)
FDR-sharpened q-value	[0.211]	[0.294]	[0.212]	[0.028]
Redistribution preference	-0.754	-0.703	-0.804	-0.736
p-value	(0.000)	(0.000)	(0.000)	(0.000)
FDR-sharpened q-value	[0.001]	[0.001]	[0.001]	[0.001]
Equality vs. efficiency	-0.509	-0.386	-0.546	-0.319
p-value	(0.022)	(0.076)	(0.038)	(0.214)
FDR-sharpened q-value	[0.044]	[0.118]	[0.034]	[0.069]
Selfishness	-0.499	-0.380	-1.199	-1.057
p-value	(0.063)	(0.156)	(0.002)	(0.006)
FDR-sharpened q-value	[0.064]	[0.179]	[0.004]	[0.014]
Economic rationality	-0.001	-0.003	0.003	-0.001
p-value	(0.867)	(0.438)	(0.384)	(0.776)
FDR-sharpened q-value	[0.407]	[0.281]	[0.212]	[0.241]
Covariates	no	yes	no	yes
Effective observations	867	867	867	867

Notes: The table presents the baseline estimates of the impact of the sent-down experience on economic preferences from Table 5 and compares the *p*-values with FDR-sharpened *q*-values. ***, **, and * stand for significance at the 1%, 5%, and 10% level, respectively.

Table B.20
Baseline estimates, with Romano-Wolf adjusted *p*-values.

Outcomes	Local linear		Local quadratic	
	(1)	(2)	(3)	(4)
Risk aversion	0.278	0.289	0.422	0.458
p-value	(0.023)	(0.020)	(0.004)	(0.003)
Romano-Wolf adjusted p-value	[0.259]	[0.311]	[0.053]	[0.069]
Patience	-0.119	-0.219	-0.224	-0.373
p-value	(0.349)	(0.094)	(0.136)	(0.020)
Romano-Wolf adjusted p-value	[0.878]	[0.716]	[0.661]	[0.302]
Positive reciprocity	0.936	0.762	0.677	0.445
p-value	(0.000)	(0.000)	(0.001)	(0.043)
Romano-Wolf adjusted p-value	[0.001]	[0.006]	[0.053]	[0.314]
Negative reciprocity	-0.159	-0.156	-0.117	0.113
p-value	(0.160)	(0.170)	(0.367)	(0.398)
Romano-Wolf adjusted p-value	[0.766]	[0.721]	[0.888]	[0.746]
Altruism	0.265	0.214	0.615	0.610
p-value	(0.030)	(0.079)	(0.000)	(0.000)
Romano-Wolf adjusted p-value	[0.405]	[0.716]	[0.012]	[0.017]
Trust others' intentions	-0.118	0.087	0.098	0.412
p-value	(0.465)	(0.590)	(0.574)	(0.025)
Romano-Wolf adjusted p-value	[0.878]	[0.938]	[0.888]	[0.314]
Trust government	-0.641	-0.461	-0.694	-0.452
p-value	(0.000)	(0.008)	(0.001)	(0.027)
Romano-Wolf adjusted p-value	[0.017]	[0.206]	[0.031]	[0.311]
Trust media	-0.158	0.054	0.173	0.426
p-value	(0.313)	(0.732)	(0.334)	(0.023)
Romano-Wolf adjusted p-value	[0.878]	[0.938]	[0.888]	[0.314]
Redistribution preference	-0.754	-0.703	-0.804	-0.736
p-value	(0.000)	(0.000)	(0.000)	(0.000)
Romano-Wolf adjusted p-value	[0.000]	[0.001]	[0.001]	[0.003]
Equality vs. efficiency	-0.509	-0.386	-0.546	-0.319
p-value	(0.022)	(0.076)	(0.038)	(0.214)
Romano-Wolf adjusted p-value	[0.226]	[0.505]	[0.253]	[0.550]
Selfishness	-0.499	-0.380	-1.199	-1.057
p-value	(0.063)	(0.156)	(0.002)	(0.006)
Romano-Wolf adjusted p-value	[0.542]	[0.716]	[0.053]	[0.099]
Economic rationality	-0.001	-0.003	0.003	-0.001
p-value	(0.867)	(0.438)	(0.384)	(0.776)
Romano-Wolf adjusted p-value	[0.878]	[0.938]	[0.888]	[0.804]
Covariates	no	yes	no	yes
Effective observations	867	867	867	867

Notes: The table presents the baseline estimates of the impact of the sent-down experience on economic preferences from Table 5 and compares the *p*-values with Romano-wolf adjusted *p*-values.

Table B.21
Robustness check using alternative bandwidth.

Outcomes	Local linear		Local quadratic	
	(1)	(2)	(3)	(4)
Risk aversion	0.349***	0.377***	0.388***	0.422***
	(0.130)	(0.134)	(0.148)	(0.156)
Patience	-0.149	-0.261*	-0.291*	-0.453***
	(0.131)	(0.137)	(0.154)	(0.169)
Positive reciprocity	0.890***	0.667***	0.523**	0.229
	(0.198)	(0.194)	(0.229)	(0.239)
Negative reciprocity	-0.145	-0.143	-0.116	-0.116
	(0.119)	(0.120)	(0.131)	(0.136)
Altruism	0.373***	0.334***	0.750***	0.764***
	(0.127)	(0.129)	(0.165)	(0.173)
Trust others' intentions	-0.058	0.211	0.223	0.603***
	(0164)	(0.166)	(0.177)	(0.195)
Trust government	-0.692***	-0.481***	-0.615***	-0.375*
	(0.192)	(0.185)	(0.209)	(0.203)
Trust media	-0.084	0.166	0.582***	0.628***
	(0.161)	(0.164)	(0.187)	(0.200)
Redistribution preference	-0.754***	-0.692***	-0.879***	-0.803***
	(0.139)	(0.137)	(0.167)	(0.167)
Equality vs. efficiency	-0.570**	-0.404*	-0.374	-0.125
	(0.234)	(0.228)	(0.267)	(0.263)
Selfishness	-0.705**	-0.545*	-1.491***	-1.340***
	(0.300)	(0.301)	(0.427)	(0.433)
Economic rationality	-0.000	-0.003	0.006*	0.002
	(0.003)	(0.003)	(0.004)	(0.004)
Covariates	no	yes	no	yes
Effective observations	725	725	725	725

Notes: The table presents RD IV estimates of the impact of the sent-down experience on economic preferences. The sent-down experience is measured by a dummy on whether the individual was sent down during the forced rustication movement. In all specifications, we instrument the sent-down experience using a dummy for birth date before the September 1, 1961 cutoff, and the bandwidth is 16 quarters. Columns 1 and 3 use local linear and local quadratic RD specifications, respectively. Columns 2 and 4 add gender, minority status, and parental occupations as additional controls. We also report the first-stage coefficients on the birth cutoff dummy in all models. Control mean denotes the mean values of the variables for people born after the cutoff. Numbers in the parentheses are standard errors clustered at the birth quarter level. ***, **, and * stand for significance at the 1%, 5%, and 10% level, respectively.

Table B.22
Robustness check using alternative kernel function.

Outcomes	Local linear		Local quadratic	
	(1)	(2)	(3)	(4)
Risk aversion	0.248**	0.251**	0.424***	0.445***
	(0.123)	(0.123)	(0.148)	(0.149)
Patience	-0.096	-0.192	-0.187	-0.437***
	(0.132)	(0.135)	(0.153)	(0.167)
Positive reciprocity	0.983***	0.831***	0.759***	0.585***
	(0.196)	(0.191)	(0.217)	(0.204)
Negative reciprocity	-0.168	-0.157	-0.116	-0.175
	(0.116)	(0.114)	(0.133)	(0.128)
Altruism	0.195	0.138	0.561***	0.556***
	(0.129)	(0.128)	(0.159)	(0.158)
Trust others' intentions	-0.162	0.020	0.050	0.517***
	(0.169)	(0.167)	(0.180)	(0.190)
Trust government	-0.630***	-0.452**	-0.725***	-0.711***
	(0.185)	(0.177)	(0.220)	(0.207)
Trust media	-0.227	-0.020	0.087	0.201
	(0.162)	(0.160)	(0.181)	(0.176)
Redistribution preference	-0.754***	-0.694***	-0.783***	-0.732***
	(0.139)	(0.143)	(0.165)	(0.156)
Equality vs. efficiency	-0.501**	-0.405*	-0.618**	-0.544**
	(0.227)	(0.222)	(0.268)	(0.251)
Selfishness	-0.356	-0.250	-1.081***	-1.317***
	(0.258)	(0.256)	(0.370)	(0.428)
Economic rationality	-0.001	-0.003	0.003	-0.003
	(0.004)	(0.004)	(0.004)	(0.004)
Covariates	no	yes	no	yes
Effective observations	867	867	867	867

Notes: The table presents RD IV estimates of the impact of the sent-down experience on economic preferences using an alternative Epanechnikov kernel function suggested by Calonico et al. (2017) for nonparametric estimation. In all specifications, we instrument the sent-down experience using a dummy for birth date before the September 1, 1961 cutoff. Columns 1 and 3 use local linear and local quadratic RD specifications, respectively. Columns 2 and 4 add gender, minority status, and parental occupations as additional controls. Numbers in the parentheses are standard errors clustered at the birth quarter level. ***, **, and * stand for significance at the 1%, 5%, and 10% level, respectively.

Table B.23
Robustness check with provincial fixed effects.

Outcomes	Local linear		Local quadratic		Control Mean
	(1)	(2)	(3)	(4)	(5)
Risk aversion	0.225**	0.229**	0.412***	0.471***	0.092
	(0.109)	(0.110)	(0.138)	(0.148)	
Patience	-0.246**	-0.266**	-0.333**	-0.390***	-0.101
	(0.113)	(0.113)	(0.133)	(0.140)	
Positive reciprocity	0.731***	0.624***	0.385*	0.193	-0.427
	(0.165)	(0.159)	(0.198)	(0.198)	
Negative reciprocity	0.055	0.064	0.223**	0.219*	0.005
	(0.095)	(0.095)	(0.108)	(0.113)	
Altruism	0.321***	0.268**	0.729***	0.713***	-0.251
	(0.110)	(0.109)	(0.151)	(0.155)	
Trust others' intentions	0.041	0.172	0.130	0.404**	-0.712
	(0.146)	(0.161)	(0.168)	(0.179)	
Trust government	-0.346**	-0.269*	-0.378**	-0.239	-0.678
	(0.143)	(0.140)	(0.171)	(0.173)	
Trust media	0.031	0.179	0.369**	0.571***	-0.689
	(0.140)	(0.141)	(0.164)	(0.176)	
Redistribution preference	-0.527***	-0.508***	-0.577***	-0.551***	-0.265
	(0.108)	(0.107)	(0.130)	(0.133)	
Equality vs. efficiency	-0.539***	-0.513***	-0.699***	-0.574**	-0.311
	(0.194)	(0.193)	(0.248)	(0.250)	
Selfishness	-0.177	-0.082	-1.010***	-0.921***	0.170
	(0.211)	(0.211)	(0.300)	(0.306)	
Economic rationality	-0.009**	-0.010**	-0.006	-0.010**	0.986
	(0.004)	(0.004)	(0.004)	(0.004)	
Covariates	no	yes	no	yes	
Fixed province	yes	yes	yes	yes	
Effective observations	867	867	867	867	
	First-stage estimates of cutoff effects				
Being sent down	0.476***	0.473***	0.580***	0.557***	0.013
	(0.050)	(0.050)	(0.075)	(0.074)	
F-statistics	7.25	5.62	7.02	5.51	
R-squared	0.19	0.19	0.20	0.19	

Notes: The table presents RD IV estimates of the impact of the sent-down experience on economic preferences. Sent-down experience is measured by a dummy on whether the individual was sent down during the forced rustication movement. In all specifications, we instrument the sent-down experience using a dummy for birth date before the September 1, 1961 cutoff, and the bandwidth is 20 quarters. Columns 1 and 3 use local linear and local quadratic RD specifications, respectively. Columns 2 and 4 add gender, minority status, and parental occupations as additional controls. All specifications include provincial fixed effects. We also report the first-stage coefficients on the birth cutoff dummy and F-statistics in all models. Control mean denotes the mean values of the variables for people born after the cutoff. Numbers in the parentheses are standard errors clustered at the birth quarter level. ***, **, and * stand for significance at the 1%, 5%, and 10% level, respectively.

Appendix C. Additional figures

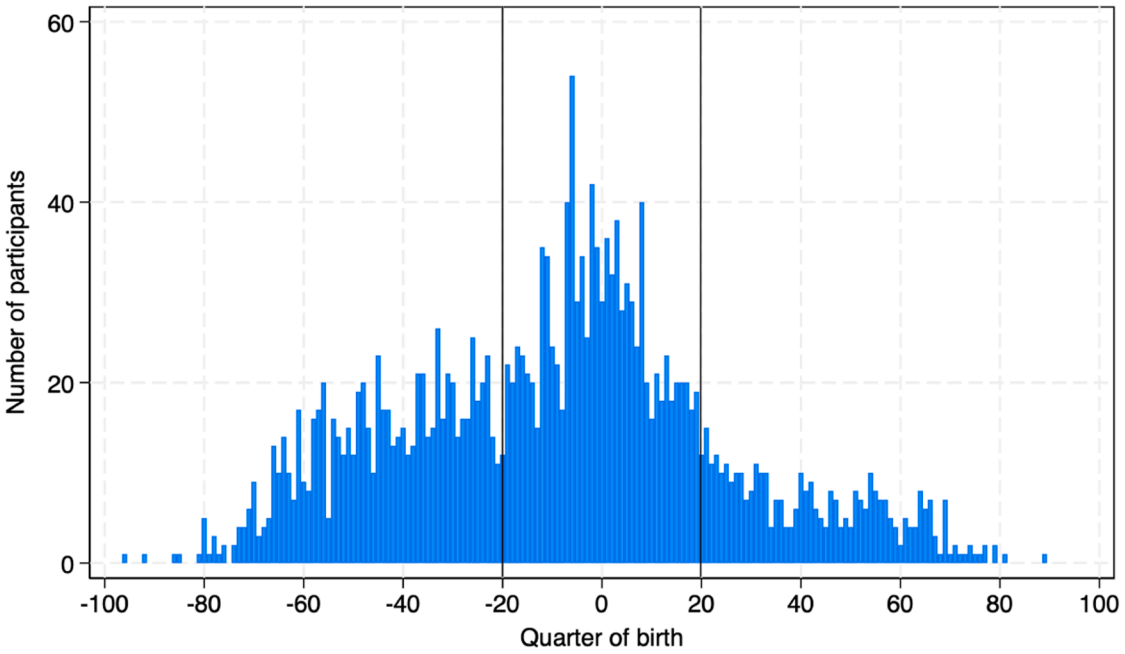

Fig. C.1. Sample size by quarter of birth.
Notes: This figure displays the number of participants in our sample by quarter of birth. The value 0 on the horizontal axis represents the cutoff used in our analysis, corresponding to September 1, 1961. The vertical black lines indicate the range of our effective estimation sample.

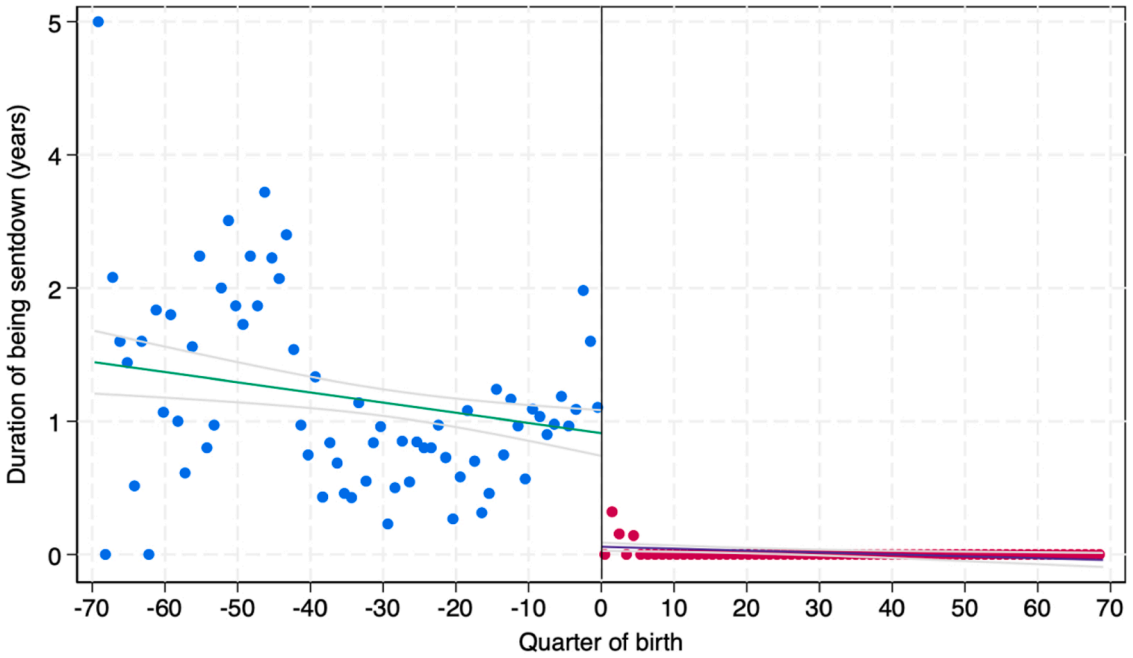

Fig. C.2. Sent-down duration by quarter of birth.
Notes: The vertical line indicates the cutoff birth date at September 1, 1961, which is normalized to 0. The dots represent the mean duration of people who were sent down for each birth quarter cohort in our sample. The green and blue lines are fitted values using local linear regressions, and the gray lines are the 95 percent confidence intervals.

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