How Does Historical Trauma Affect Political Participation?

Evidence from the Send-Down Movement in China

Xinzheng Shi and Ming-ang Zhang*

Abstract

Taking advantage of China's send-down movement, we investigate how experiencing a political movement during adolescence affects political participation decades later. Using data from the China Family Panel Survey and the regression discontinuity design, we find that the send-down experience significantly reduces individuals' political participation, measured by their participation in community committee elections, time spent on community service activities, and how much they care about public news. Further analysis suggests that the send-down experience negatively affects political participation through poorer mental health and less trust in local government.

Key Words: Political participation, Send-down movement, China

JEL Classification: D71, O15, P26

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1 Introduction

Although citizens' political participation plays an important role in policymaking and implementation (Madestam and Yanagizawa-Drott, 2012), there is no consensus about what determines political participation. Studies find that political participation can be affected by personal characteristics (Wolfinger and Rosenstone, 1980; Dee, 2004), the media (Gentzkow, 2006; Campante, 2013), and family ties (Alesina and Giuliano, 2011). However, little work has been done on the effect of adolescent experiences of political policies on political participation in adulthood despite the importance of early life conditions for many subsequent cognitive and non-cognitive outcomes (Heckman, 2007).[1] In this paper, we fill this gap by investigating the effects of experiencing the send-down movement in adolescence on an individual's political participation in adulthood in China. Exploring this question helps us understand the formation of political preferences and behaviors in early life and leads to important policy implications for building a stable democratic society by fostering citizens' engagement in politics with public polices targeting childhood.[2]

We exploit a large-scale political campaign, the forced send-down movement, to identify the effect of the historical trauma people experience during adolescence on their political participation in adulthood. The term 'send-down' is short for '*Up to the mountains and down to the villages*' and refers to a movement where urban youth were forced to relocate to the remote countryside (Li et al., 2010). It was a nationwide mandatory political campaign that took place between the mid-1950s and the late 1970s in China, in which more than 17 million urban youth were sent to remote rural areas to receive the re-education from the peasants. Because there was a huge rural-urban gap in China during Mao's era, the vast majority of urban youth were unwilling to leave their families, giving up the superior conditions in cities to go to the harsh and hopeless countryside (Zhou and Hou, 1999). As a result, the government forced the urban youth and their families to comply using various means (Liu, 2009). China's send-down movement, as an exogenous shock to urban youth, provides us with a natural experiment to identify the causal relationship between historical movements and political participation.

We estimate the effects of the send-down experience on an individual's political participation using the regression discontinuity (RD) design with birth cohort as the running variable. To determine the cutoff point for birth cohort, we exploit that (1) the movement ended in October 1978, (2) the movement targeted junior and senior high school graduates, and (3) people usually finished junior high school at age 17 in Mao's era (Li et al., 2010), so the last birth cohort affected by the movement was those born in August 1961, who graduated from junior high school in the summer of 1978. The cutoff for birth cohort is therefore set to August 1961. Anyone born before then faced a higher probability of being sent down. Essentially, we compare the political participation of people born immediately before and after August 1961.

We use data from the China Family Panel Survey (CFPS). Political participation is

[1] Madestam and Yanagizawa-Drott (2012) investigate the impact of cultural experiences during childhood on political views and action.

[2] There is a literature evaluating public policies that target childhood, such as the Moving to Opportunity experiment, which has provided low-income families the chance to live in better communities in U.S. since 1994 (see, for example, Chetty et al., 2016), and the Eradication of Hookworm Disease program, which eradicated hookworm disease in the American South in the 1910s (see, for example, Bleakley, 2007).

measured as (1) voting in a community committee election, (2) participating in community service activities, and (3) caring about public news. In contemporary China, community (village) committee elections are the most important grassroots elections that urban (rural) citizens can participate in. The other two measures are also important channels for civic engagement, as suggested in Milligan et al. (2004) and Dee (2004).

We find that the rustication experience significantly reduces people's political participation. In our preferred specification, having been sent down leads to a 36.8-percentage-point decrease in the probability of voting in community committee elections, a 0.2-hour-per-day decrease in participation in community and public service activities, and an 18.1-percentage-point decrease in the probability of caring about political news. The results are robust to alternative measures of political participation, regression function specifications, and bandwidth choices. The heterogeneous analysis shows that the negative impact on citizens' participation is larger for sent-down youth with a disadvantageous family status or from an economically more developed province.

We then explore the potential channels through which the send-down experience decreases political participation. We categorize the possible channels into social-economic status, mental health, and attitudes toward government, and empirically test the effect of the send-down experience on them. We find no statistically significant effect of the send-down experience on people's social-economic status, but significantly negative effect on their mental health and trust in local government officials. Therefore, we think the send-down experience harms political participation by the psychological trauma it left. This nationwide political campaign placed tens of millions of urban youth in adverse circumstance and left them with historical trauma, leading to their decreased political engagement.

Our paper makes three contributions to the literature. First, it adds to the literature about the formation of political behaviors and attitudes, especially the interaction of government policies and citizens' political participation (Manacorda et al., 2011; Campbell, 2012; Baicker and Finkelstein, 2018). Studies have shown that political participation can be affected by the resources under people's control, their perceptions about politics, and so on (Wolfinger and Rosenstonem, 1980; Dee, 2004; Milligan et al., 2004; Gentzkow, 2006; Alesina and Giuliano, 2011; Campante, 2013; Charles and Stephens, 2013; Campante and Chor, 2014; Falck et al., 2014; Hagemann and Kufenko, 2016), and public policies can shape or alter citizens' political engagement by influencing either of these factors. For example, it is found that macroeconomic policies (Nordhaus, 1975; Fair, 1978) and welfare programs such as the government transfer (Manacorda et al., 2011; De La O, 2013; Corman et al., 2017), Medicaid (Baicker and Finkelstein, 2018), and Moving to Opportunity (Gay, 2012) have significant influence on political behaviors. While these papers focus on the effects of *economic* policies and circumstances, few has pay attention to *political* policies.[3] This paper shows how experiencing a *political* policy during adolescence affects political participation decades later. It therefore sheds light on the potential influences of political disorders on teenagers. Our paper also contributes to understanding the formation of political trust by showing the negative effect of the send-down experience on trust in government. While it is widely agreed that political trust plays a significant role in economic performance and policy implementation (Nye et al., 1997;

[3] One exception can be Alesina and Fuchs-Schuendeln (2007), who show that peoples' political preference can be shaped by the political regime they grow up in.

Hetherington and Husser, 2012; Sapienza and Zingales, 2013; Kuziemko et al., 2015), few studies have explored its origins (Chen and Yang, 2015). Our paper shows that a trauma experience as a result of adverse state policy can harm political trust. More broadly, this paper relates to the literature on the effects of political policies and institutions on stability and development (Acemoglu and Robinson, 2001; Kung and Ma, 2014). For example, it is found that China's elite recruitment system, the civic exam, has effects on human capital accumulation lasting into the present (Chen et al., 2017), and that its abolition contributed to revolution participation and modernization in the late Qing dynasty (Bai and Jia, 2016; Bai, 2018). By examining how political movements influence peoples' political behavior, this paper provides empirical evidence for the political impacts of political institutions and movements.

Second, our paper adds to the literature on the influence of early life experiences on preferences and behaviors (Giuliano and Spilimbergo, 2013; Malmendier and Nagel, 2011; Chen and Yang, 2015; Roland and Yang, 2017; Cantoni et al., 2017). For example, it is found that experiences of macroeconomic shocks impact risk preferences and stock market investments (Malmendier and Nagel, 2011) and support for government redistribution (Giuliano and Spilimbergo, 2013).[4] More recently, Gong et al. (2016) show that the send-down movement fostered the non-cognitive skills of the rusticated youth, measured by their internal locus of control. Roland and Yang (2017) find that the 'lost generation' whose education was disrupted during the Cultural Revolution in China are less inclined to believe that effort pays off, and Lu et al. (2018) find that students' competitive experiences affect their gender gap in preferences, trust, and academic performance. Consistent with the literature, we find that adolescence experience of a political movement, such as an adverse state policy, can influence political actions, and we identify the underlying mechanism.

Finally, our paper enriches the study of China's send-down movement. There is a large literature focusing on the long-run impacts of this movement, including its impacts (1) on the rusticated youth's life course and personal traits (Deng and Treiman, 1997; Zhou and Hou, 1999; Li et al., 2010; Gong et al., 2016), (2) on the human capital of local residents where the educated youth were relocated (Chen et al. 2018; You, 2018), and (3) on the inter-province relations decades later, such as bilateral trust (Xing and Zhou, 2018) and migration patterns (Kinnan et al., 2018). However, there are few studies connecting this state policy with long-run political actions. Although Harmel and Yeh (2016) examine differences in the political attitudes between sent-down and non-sent-down youth within the Cultural Revolution cohort, their results are based on simple correlation analysis. Our paper differs from theirs in two aspects. (1) We pay attention to political actions instead of attitudes, and (2) we exploit the RD design to identify the causal effect.

Our paper exploits a similar setting to that of Gong et al. (2016). However, the research questions of the two papers are very different. While Gong et al. (2016) investigate the effect of the send-down experience on personality traits, specifically non-cognitive skills, we investigate another important question: how the send-down experience affects political participation, which is important for policymaking and policy implementation. Exploring this question can help us better understand the formation of political participation in early life and has important policy implications for building a democratic society. We have also explicitly investigated the potential mechanisms and empirically identified two possible channels through

[4] For more related research, see Di Tella et al. (2007), Malmendier and Nagel (2016), and Nunn and Wantchekon (2011).

which the send-down experience affects political participation negatively: poorer mental health and decreased trust in local government. It also distinguishes our paper from that of Gong et al. (2016), which provides indirect evidence for the underlying mechanisms by excluding some channels.

The remainder of the paper is organized as follows. Section 2 provides the background. Section 3 describes the data. Section 4 presents the empirical strategy used. Section 5 presents the main results, different robustness checks, and analysis of possible heterogeneous effects. We discuss the possible channels in Section 6, and provide our conclusion in Section 7.

2 Background

2.1 The Send-down Movement in Mao's Era

The send-down movement began in the 1950s and reached its peak during the Cultural Revolution,[5] ending in the late 1970s (Zhang et al., 2007). In 1955, 60 adolescents in Beijing with revolutionary ideals formed a group called the 'Voluntary Youth Team for Reclamation' and went to the Great Northern Wilderness (*bei da huang*) to reclaim the land. This was the first voluntary send-down group. In response, Mao Zedong, China's highest leader at the time, stated in December of the same year that 'the countryside is a vast place for the adolescents to make great accomplishments' (Gu, 1997). In response to Mao's call, the send-down movement began. The movement was only fragmentary at first.

After the Cultural Revolution began in 1966, all levels of schools in China were closed. As a result, students had to leave school, and many of them joined the Red Guards (*hong wei bing*).[6] In 1968, the chaos caused by the Red Guards paralyzed the government. In these circumstances, Mao Zedong issued his 'highest command' that 'it is very necessary for the educated urban graduates to go to rural areas and receive the re-education by the poor peasants' (Liu, 2009). The main aim was to deal with the chaos generated by the Red Guards and the high unemployment among urban teenagers. It was also considered a tool to boost rural development and narrow the urban-rural gap. After Mao Zedong's command, the send-down movement was made official and quickly spread to the whole country. For example, from January to February 1969, more than 1.5 million youth in urban China were sent down to the countryside (Zhou, 2014).

After the Cultural Revolution ended in 1976, the send-down movement came close to an end as well. In October 1978, a decision was made by the Second National Conference on Send-Down Youth to end the send-down movement and let the rusticated return to the city. From 1967 to 1978, 17 million urban youth were forcibly relocated to remote rural areas (Gu, 1997; Li et al., 2010), with the majority of them returning to cities after 1979 (Zhou, 2014).

Two key facts about the movement should be emphasized. First, this large-scale movement targeted junior and senior high school graduates who lived in urban areas. According to the schooling arrangement of the time, children began primary school at age 8,

[5] The Cultural Revolution was a struggle for power within the Communist Party of China that manifested as wide-scale social, political, and economic chaos, and grew to include large sections of Chinese society; it eventually brought the entire country to the brink of civil war. (See http://en.wikipedia.org/wiki/Cultural_Revolution).

[6] Red Guards were a student mass paramilitary social movement mobilized by Mao Zedong in 1966 and 1967 during the Cultural Revolution. (See https://en.wikipedia.org/wiki/Red_Guards).

and the primary, middle, and high schools required 6, 3, and 3 years to complete, respectively (Li et al., 2010), so the youngest urban youth affected by the send-down movement were those born in August 1961.[7]

Second, this political mobilization campaign was mandatory for most people at the time, although a very small number of teenagers who were inspired by their revolutionary ideals went voluntarily (Bernstein, 1977; Zhang et al., 2007; Bonnin and Horko, 2013). During Mao's era, there was an extreme urban-rural gap both materially and culturally, so being rusticated meant not only getting separated from one's parents and moving to an unfamiliar environment, but also leaving the superior conditions in the cities and tolerating harsh circumstances in the villages. Local governments took coercive measures to force compliance by reluctant youth and their parents. For example, local governments threatened urban youth by having their parents fired or by publicly criticizing holdouts (Liu, 2009). One rusticated youth wrote, 'That night (when I left my home for the countryside), all my family members cried, and my father's hair went quite white almost overnight. However, as a family of the bottom five types (*hei wu lei*), there is no hope for us. I have no choice but to go to the most remote area in Yun'nan border' (Deng, 2009). Two sociologists who experienced the movement recalled, 'As the sent-down youth were forced to move to villages and join peasants living in poverty and under strict political/mobility control, the immediate negative impacts of the policy were obvious. To many urban youth, including us, the send-down episode remains among the most difficult experiences in our lives-we suffered from a lack of material supplies, removal from our families, an unfamiliar environment, harsh physical labor, and so on' (Chen and Cheng, 1999).

2.2 Community/Village Committee Elections in China

In China, there are two types of grassroots elections: community/village committee elections and elections for the township-level deputies of the National People's Congress (NPC). These two types of elections are the only elections that ordinary Chinese citizens can participate in. Because the data we use for our baseline results does not have information on voting in NPC deputy elections, we focus on village/community committee elections.[8]

There are five levels of government in China: central, provincial, prefecture-level city, county, and township. Below the township government, the community (in urban areas) or village (in rural areas) committees act as the self-administrating unit for local citizens, as stipulated by the 1982 version of the Chinese Constitution. Similar to upper-level governments, there are two groups of leaders in each village/community: the director of the village/community committee and the secretary of the CCP branch.

The origin of community committees can be traced to the 1950s. In 1954, the Organizational Rule of the Community Committee (ORCC) confirmed that community committees were the self-administrative unit for urban citizens. However, community committees were disbanded during the Cultural Revolution. With the end of the Cultural Revolution and the beginning of economic reform, grassroots organization came to life again,

[7] In China, the academic year begins in September. For example, people born in August 1961 were eligible for primary school on September 1, 1969 and graduated from junior high school in the summer of 1978, when the send-down movement was still going on. People born in September 1961 were eligible for primary school on September 1, 1970 and graduated from junior school in the summer of 1979, after the send-down movement had ended.

[8] In a robustness check, we use data from another source which includes information on voting in NPC deputy elections to estimate the effect of the send-down experience on the probability of voting in NPC elections. We will briefly describe NPC elections alongside those results.

and in 1989 the ORCC was amended and renamed the Organizational Law of the Community Committee (OLCC), requiring the election of the community committee and its director. Since then, community committee elections have been introduced. Rural reforms in China since 1978 ended the People's Commune (*renmin gongshe*), making village committees the administrative unit for villagers. At first, all members of the village committee and village CCP branch were appointed by the township government and CCP branch. In 1987, a tentative version of the Organizational Law of the Village Committee (OLVC) passed, requiring the village committee and its director to be elected (Shen and Yao, 2008).

Shi (1999) and Chen and Zhong (2002) show that people in China choose to vote in these semi-competitive (limited-choices) elections to pursue their political interests. For example, the motivation to punish corrupt officials is one factor, and grassroots elections are important for China's democratic transformation (Shi, 1999; Heberer, 2009). Research also provides supportive evidence for the significance of the local elections in communities and villages, demonstrating that grassroots democracy plays an important role in providing public service (Choate, 1998; Read, 2000; Zhang et al., 2004; Gan et al., 2012), reducing income inequality (Shen and Yao, 2008) and increasing the cadres' accountability to local citizens (Martinez-Bravo et al., 2011).

However, as voting behavior in local communities may not be sufficient for measuring the political participation of citizens, we will also include other possible measures for political participation, including caring about public news, participating in community activities, and voting in the National People's Congress deputy elections. By combining several different measures of political behaviors, we can adequately measure people's political participation behaviors.

3 Data and Variable Construction

3.1 Data

We use data from the 2010 and 2014 waves of the China Family Panel Survey (CFPS), a biennial panel survey carried out by the China Social Science Survey Center at Peking University. It covers 25 of the 31 provinces in China[9] and it includes questionnaires collecting information on individuals, families, and communities. The baseline survey was conducted in 2010, and all family members of 14,798 households (including 33,600 adults) were surveyed. The data from the 2010 baseline survey and the 2012, 2014, and 2016 follow-up surveys have been released.[10] Because only the baseline survey has information on an individual's send-down experience while one of our key outcome variables, village/community election participation, is from the 2014 follow-up survey, we use data from the 2010 and 2014 waves and restrict our sample to those who completed both waves of the survey.

We re-labelled an individual's urban or rural *hukou* status according to their *hukou* status at age 12, as this reflects an individual's *hukou* identity before being sent down (hereinafter, rural/urban *hukou* refers to one's *hukou* status at age 12). Because the send-down movement applied only to urban youth, we further restrict the sample to those with an urban *hukou* for the

[9] Inner Mongolia, Hainan, Tibet, Qinghai, Ningxia and Xinjiang are not covered.
[10] For more details about the CFPS survey, see http://www.isss.pku.edu.cn/cfps/EN/.

main analysis. We also include those with a rural *hukou* in the sample to conduct RD-DD in the Appendix.

3.2 Variable Construction

Send-down Experience. Our treatment variable, 'Send-down' is a dummy variable indicating whether the individual was sent down. It was taken from a question in the CFPS-2010 survey asking, 'Do you have the following experience: being sent down?'

Political Participation. The outcome variable we are interested in is individuals' political participation. As mentioned in Alesina and Giuliano (2011), political participation is not just about voter turnout in elections, but also includes a variety of activities like volunteering as unpaid campaign workers or discussing political topics with others. Besides, as democracy in China is still imperfect, local community voting may not be sufficient for measuring the political participation of Chinese people. We therefore use three different variables to measure individuals' political participation, which are from both CFPS-2010 and 2014 surveys, as surveys at different waves cover different questions. (1) The first measure is voting in community committee elections, measured with a dummy variable indicating whether the respondent voted in the most recent community committee election. It is constructed using answers to the question in the CFPS-2014 survey asking, 'Did you vote in the most recent village/community election?' (2) The second measure is time spent on community activities, measured as an individual's daily hours devoted to community and public service activities on days off. It is constructed using answers to the question in the CFPS-2010 survey asking, 'In the most recent non-vacation month, how many hours on average did you spend on community and public service activities every day off?' (3) The third variable measures caring about public news using a dummy variable. It is constructed using answers to the question in the CFPS-2010 survey asking, 'Do you care about (at least one of) the following issues: Anti-corruption, the legal system, international news, economic news, medical and health news, agriculture and the village, or social issues?'

Predetermined Variables. We consider the following predetermined variables: gender, ethnic minority, parents' literacy and political status, parents' absence (weeks that the respondent did not live with his/her parents) between the ages of 4 and 12, migration experiences before age 12, and the family label (*jiating chengfen*) during the Cultural Revolution.[11] A parent's literacy is measured with a dummy variable equal to 0 if the parent was illiterate and 1 if they had at least a primary school education. A parent's political status is also measured using a dummy variable, equal to 1 if the parent was a member of the China Communist Party (or its Youth League) or of any other party.

3.3 Summary Statistics

Table 1 shows the summary statistics for the variables of people with urban *hukou* status born within 12 years of August 1961 in the sample (August 1961 is the birth cohort cutoff for our RD design).[12] As can be seen, the proportion of men and women in the sample are almost the same. 21 percent were ever sent down. In terms of political participation, 23 percent of

[11] Although the family type was given during the Cultural Revolution, it was already fixed before then, so we treat it as predetermined.

[12] 12 is the optimal bandwidth computed using the method of Imbens and Kalyanaraman (2012) to implement the local liner approach for our RD regression. We describe the details in the empirical section. We show the summary statistics for rural *hukou* people in Appendix Table A1.

people with urban *hukou* status in the sample voted in their community committee election. The share of people caring about public news is 89 percent and time spent on community and public service activities averages only 0.04 hour per day.

[Table 1]

4 Empirical Strategy

We take advantage of the send-down movement as a natural experiment to examine the influence of experiencing a political movement during adolescence on subsequent political engagement. Specifically, we use fuzzy regression discontinuity design to identify the causal effect.

4.1 The Regression Discontinuity Design

Let Y_i represent the outcome variable of individual i and $Send\_down_i$ represent their treatment status, that is, whether one was sent down. To motivate our RD regression, consider the following OLS regression:

$$Y_i = \alpha + \beta \times Send\_down_i + \epsilon_i \quad (1)$$

The OLS estimate, which simply compares the outcomes of sent-down youth to the outcomes of non-sent-down youth, can be biased due to the nonrandom selection of being sent down. For example, although the movement was compulsory, a small number of urban youth with revolutionary ideals volunteered to relocate to the countryside, while others with politically connected families could avoid being sent down using family privilege (Bonnin and Horko, 2013).

An RD approach provides us with a locally randomized experiment to make causal inference, in which whether one is treated completely (in the sharp RD case) or partially (in the fuzzy RD case) depends on the location of one's running variable relative to the cutoff point. In our paper, we compare the outcomes of urban *hukou* youth born immediately before and after the cutoff time caused by the official end of the send-down movement, because the two groups should be similar in all aspects except for that the former had much higher probability of being sent down. We consider only the cutoff point caused by the end (rather than the beginning) of the movement because the beginning cutoff, September 1945, faces the severe confounding effect of the college entrance suspension at the early stage of the Cultural Revolution (We will describe the college entrance suspension in detail in Section 4.2). Thus, the beginning cutoff not only means a discontinuous possibility of being sent down, but also represents a discontinuous possibility of entering into college after finishing senior high school, so the cohort born after this cutoff have a discontinuously lower opportunity to further their schooling even without the send-down movement (Li and Meng, 2017). We take advantage of the 1990 Population Census of China to check the pattern, as shown in Appendix Figure A1.[13] The proportion of people with college education remained above the 4% level for each cohort born between 1935 and 1945, after which there was a sharp decrease to less than 2% for the following 10 years.

[13] We consider only people with urban *hukou* status.

The end of the mandatory send-down movement means that there is a discontinuous drop in the probability of being sent down between people born immediately before and after the cutoff point:

$$P_r(Send\_down_i = 1|c_i) = \mathrm{E}(Send\_down_i|c_i) = \begin{cases} g_0(c_i) & if \ \ c_i \le c_0 \\ g_1(c_i) & if \ \ c_i > c_0 \end{cases},$$
$$\text{where } \ g_1(c_0) < g_0(c_0)$$

Here, c_i is the running variable, the birth cohort based on the academic year, as in Gong et al. (2016). China followed the former Soviet Union's schooling system in which school started in September every year. Therefore, the oldest students in the same grade were born in September and the youngest were born in August of the following calendar year. We divide people born in each year cohort (hereinafter a year cohort is defined as running from September to the next August) into four quarters as in Gong et al. (2016): the first quarter includes those born from September to November, the second quarter includes those born from December to the February of the following (calendar) year, the third quarter includes those born from March to May of the following year, and the fourth quarter includes those born from June to August of the following year. The birth cohorts we use in our analysis are grouped into these quarter units.

c_0 is the cutoff point of the running variable, defined as the birth cohort of June-August 1961. As mentioned above, we consider only the treatment status change and the corresponding cutoff caused by the official end of the movement. Because the movement ended in October 1978, the youngest cohort affected should be junior high school graduates from 1978, that is, the birth cohort of June-August 1961. Those born in September-November 1961 were in the first birth cohort free from the movement. Besides, the rusticated youth born in June-August 1961 were most likely to be sent down in 1978 and return to their home city after 1979 (most rusticated youth returned to their home after 1979), so they would have stayed in the countryside for at least one year.

We use fuzzy RD in our paper, as there is not a deterministic relationship between the treatment status, being sent down, and the relative birth time (relative to the cutoff time). In this case, β, which represents the causal effect of having been sent down on political participation, can be derived from the following equation according to Hahn et al. (2001):

$$\hat{\beta}_{RD} = \frac{\lim_{c \to c_0^+} E[Y_i|c_i = c] - \lim_{c \to c_0^-} E[Y_i|c_i = c]}{\lim_{c \to c_0^+} E[Send\_down_i|c_i = c] - \lim_{c \to c_0^-} E[Send\_down_i|c_i = c]}$$

Fuzzy RD can be implemented with two-stage least squares (2SLS), so it is essentially an instrumental variable (IV) method (Hahn et al., 2001). The endogenous explanatory variable is the send-down experience, $Send\_down_i$, and the IV is being born before the cohort of June-August 1961. We use the non-parametric approach, that is, local linear regression, to estimate $\hat{\beta}_{RD}$ (Lee and Lemieux, 2010), which uses only the subset of the sample within a fixed bandwidth near the cutoff point to estimate the linear equations. When the rectangular kernel function is used, the first-stage and reduced form equations of the RD regression are:

$$Send\_down_i = \alpha_1 + \beta_1 Eligible_i + \gamma_1(c_i - c_0) + \delta_1 Eligible_i \times (c_i - c_0) + \mathrm{u}_i \quad (2)$$

$$Y_i = \alpha_2 + \beta_2 Eligible_i + \gamma_2(c_i - c_0) + \delta_2 Eligible_i \times (c_i - c_0) + \varepsilon_i \quad (3)$$

where $Eligible_i \equiv 1\{c_i < c_0\}$[14] represents the eligibility status. Then, $\hat{\beta}_{RD} = \frac{\hat{\beta}_2}{\hat{\beta}_1}$. We allow people born in different cohorts to be different in their political participation by controlling for a birth cohort trend $c_i - c_0$. Including $Eligible_i \times (c_i - c_0)$ allows for this cohort trend to differ between the two sides of the cutoff. To control for seasonality and school start age effects caused by the threshold coming between August and September, we include quarter of birth fixed effects in each regression as in Clark and Royer (2013).[15] We further address this issue with a RD-DD (augmenting the RD design with difference-in-differences) framework where the rural *hukou* sample serves as the control group. This can also help control for any other confounding factors that may have occurred in both cities and villages. However, the rural sample may not be a good control group due to the different development trajectories and experiences between urban and rural citizens, and because there may be spillovers among them. The results are shown in Appendix Table A2.

Bandwidth selection is important in the local linear regression. A larger bandwidth increases the sample size and improves the preciseness of the estimation but reduces the accuracy of the linear equation specification. A smaller bandwidth can improve the accuracy of the linear equation specification, but fewer samples make the estimation results less precise (Imbens and Lemieux, 2008). We follow the literature and use the bandwidth selection method proposed by Imbens and Kalyanaraman (2012) to calculate the optimal bandwidths for each equation and use the smallest one as the main results in this paper. The bandwidth we use is 12 years, which means citizens born between September 1949 and August 1973 are included. We consider different bandwidths for robustness.

Standard errors are clustered at the quarter-year of birth level to allow for correlation within a birth quarter cohort.

4.2 Validation of the RD Design

The validity of the RD design relies on the assumption that individuals cannot manipulate their treatment status precisely (Lee and Lemieux, 2010), which means that factors other than the treatment status should change continuously at the cutoff. Otherwise, individuals distributed on different sides of the cutoff might potentially differ from each other. In our case, it is reasonable to believe that parents had no foresight about the movement in 1961 (ordinary people would not have known in 1961 that the movement would surge in the 1960s and end in 1978), so it is reasonable to treat the relative birth time (relative to the cutoff) as random.

We 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, parents' literacy and political status, parents' absence between the ages of 4 and 12, migration experience before age 12, and family label during the Cultural Revolution. Figure 1 shows the distribution and local linear fitting of these predetermined variables for the urban *hukou* people. We see no clear jumps in any of these variables around the cutoff. Next, we run the RD regression, taking these predetermined variables as dependent variables. The regression results are shown in Table 2. The coefficients of $Eligible_i$ are small in magnitude and statistically

[14] $1\{\ \}$ takes the value of 1 if the inequality in the bracket holds and 0 otherwise.

[15] The cutoff between August and September determines one's school start age, or in other words, age-in-grade (Clark and Royer, 2013), which may cofound the send-down effect.

insignificant for all predetermined variables. This implies that it is reasonable to believe that there is no precise manipulation of the running variable.

[Figure 1]

[Table 2]

In addition, our RD specification can be invalid if there are cofounding shocks around the cutoff that had a discontinuous effect on people born on different sides of the cutoff. One possible cofounding shock is the Great Famine that happened from 1959 to 1961 and resulted in about 30 million deaths in China (Chen and Yang, 2015). However, its impact on the urban population was very limited, instead mainly affecting rural areas (Chen and Yang, 2015; Roland and Yang, 2017). Therefore, it is not a major concern in this paper.

Another possible confounding factor is the Cultural Revolution, which occurred between 1966 and 1976, resulting in severe social disorder. Note that to confound the effect of the send-down movement, the Cultural Revolution must have had a discontinuous influence on the cohorts born before and after August 1961. However, this is not the case. The different cohorts born before and after our cutoff experienced the Cultural Revolution at different ages. For example, those born in 1960 were 6 years old and those born in 1962 4 years old when the Cultural Revolution occurred, so it is reasonable to believe the influence of the Cultural Revolution is continuous across different cohorts. By controlling for the cohort linear trend (and thus controlling for one's age when the Cultural Revolution occurred) and allowing this trend to be different on the different sides of the cutoff in the regression, we can control for the potential influence of the Cultural Revolution.

In addition to the Cultural Revolution itself, two other events also occurred: the closure of schools at the beginning of the Cultural Revolution and the college entrance suspension and resumption. Below, we analyze why these are not major concerns either.

(1) The cohorts around the cutoff were not affected by the closure of schools at the beginning of the Cultural Revolution. When the Cultural Revolution began in 1966, all levels of schools in China were shut down. However, after only one year the schools reopened, in October 1967, to allow students to resume schooling. The cohorts around August 1961 were not affected by the school closure, as by 1966 they had not yet reached schooling age. In Appendix Figure A2 we show the continuity of finishing junior high school for cohorts born around August 1961, ensuring that their education before being sent down was not disrupted by the Cultural Revolution.

(2) The cohorts around the cutoff were not affected by the college entrance resumption after the Cultural Revolution came to an end. At the start of the Cultural Revolution, the college entrance examination was suspended nationwide, and there was almost zero college enrollment between 1966 and 1969 (Li and Meng, 2017). 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. It was not until 1977, after the Cultural Revolution ended, that the national college entrance examination was resumed. Therefore, people who graduated from senior high school in 1976 or earlier, compared with those in 1977 or later, may have had fewer opportunities for higher education, as identified by Roland and Yang (2017). This corresponds to the cutoff of 1956, which is much earlier than the cutoff for the send-down movement, August 1961. Thus, it is reasonable to believe there would be no systematic difference in college education between cohorts born

before and after August 1961, if there was no send-down movement.

5 Empirical Results

5.1 First Stage Results

Figure 2 plots the relationship between send-down experience and birth cohort for people with urban *hukou* status. In this figure, each dot represents the proportion of urban people who were sent down within each year cohort (we average the y variable within year-of-birth cohort to reduce the dispersion of the distribution), and the solid lines are the linear fits for each side of the cutoff, and the dashed lines mark the 95 percent confidence interval. We see a significant drop in the proportion of cohorts with send-down experience at the cutoff. Compared with cohort ineligible for the send-down movement (those born after August 1961), eligible cohorts (those born before August 1961) are more likely to have been sent down by a degree of more than 20 percentage points.

[Figure 2]

Column (1) in Panel A of Table 3 shows the first-stage regression results, where the linear birth trend, its interaction with $Eligible_i$, and quarter of birth fixed effects are controlled for. The coefficient of $Eligible_i$ is positive and statistically significant at the 1 percent level, indicating that being born before the cutoff leads to a 28.6-percentage-point higher probability of having been sent down. The F value for the null hypothesis that the coefficient of $Eligible_i$ equals zero is 32.08, excluding the weak instrument problem and confirming that $Eligible_i$ serves as a valid instrument for send-down experience.

[Table 3]

5.2 Main Results

Figure 3 shows the political participation of birth cohorts for people with urban *hukou* status. Each dot represents the mean value of the variables measuring political participation within each year cohort, and the solid lines are the linear fits for each side of the cutoff, and the dashed lines mark the 95 percent confidence interval. The measures of political participation include voting in community committee elections, engaging in community/public service activities, and caring about public news. All of the outcome variables rise sharply at the cutoff, meaning that people born before the cutoff and who therefore experienced the send-down movement have a lower probability of participating in political activities.

[Figure 3]

The results of the reduced-form regressions in columns (2) to (4) in Panel A of Table 3 confirm the visual impression. In each regression, we control for linear birth cohort and its interaction with $Eligible_i$ and quarter of birth fixed effects. The coefficient of $Eligible_i$ is -0.103 for voting in community elections and statistically significant at the 1 percent level, -0.058 for time spent on community activities and statistically significant at the 1 percent level, and -0.052 for caring about public news and statistically significant at the 10 percent level. Compared with the mean values of the outcome variables for the control group of people born within one year after the cutoff as reported in the last row of Panel A, the estimated coefficients of $Eligible_i$ in columns (2) and (3) are large, suggesting that having been born before the cutoff leads to a large decrease in people's engagement in politics.

The IV regression results in Panel B of Table 3 further confirm our findings, where $Eligible_i$ is used as an IV for $Send\_down_i$. In each regression, we control for linear birth cohort and its interaction with $Eligible_i$ and include quarter of birth fixed effects. The coefficients of $Send\_down_i$ are all significantly negative for different measures of political actions, showing that the send-down experience exerts significantly negative effects on individuals' political participation. The results tell us that the send-down experience results in a 36.8-percentage-point decrease in the likelihood of voting in community committee elections, which is statistically significant at the 5 percent level, a 0.20-hour-per-day decrease in citizens' engagement in public service activities, which is statistically significant at the 1 percent level, and an 18.1-percentage-point decrease in caring about public news, which is statistically significant at the 10 percent level.

5.3 Robustness

Alternative Measures of Political Participation in CFPS. As a robustness check, we use alternative measures from the CFPS to capture political behaviors. (1) We define a dummy variable to measure *voluntary* voting in community committee elections. The CFPS-2014 survey contains a question asking about the voluntariness of voting in the village/community election: 'Was your vote in the recent village/community election voluntary or required by others?' The new outcome variable takes the value of 0 if the respondent voted involuntarily or did not vote. (2) We define a dummy variable to measure whether the respondent is involved in community/public service activities, instead of using the time spent. (3) We adopt a narrow definition of caring about public news, including news only about anti-corruption, the legal system, economic news, agriculture and the village, and social issues. We use these three variables as outcome variables to run IV regressions and report the results in columns (1) to (3) in Table 4. The estimates show that the send-down experience still has negative effects on alternative measures of political engagement, although some of the statistical significance decreases.

[Table 4]

The Effect of Send-down on Voting in NPC Elections (Evidence from CGSS-2006). Aside from the local community committee election, the other grassroots election in China is the election for the township-level deputies of National People's Congress (NPC).[16] To consider the effect of the send-down experience on citizen participation in NPC deputy elections, we use the 2006 wave of the China General Social Survey (CGSS).[17] The outcome variable we

[16] The National People's Congress is the legislature in China. In each hierarchy of the government, there is a corresponding NPC. In the grassroots NPC, that is, the township level, deputies are elected by the citizens through direct election. NPC deputies at other levels are elected by the lower-level deputies, which is the so-called indirect election. In a recent book, Truex (2016) proposes a concept called 'representation within bounds', arguing that China's NPC does represent the citizens within bounds. Despite the debate about the NPC's function and its election process, we believe there is little disagreement that participating in the grassroots NPC deputy elections manifests citizens' obedience and coordination with the regime and institution, and it is an important way to engage with politics.

[17] CGSS is an annual cross-sectional survey conducted by the China Survey and Data Center at Renmin University starting in 2003. In each wave of the CGSS, over 10,000 households are randomly chosen from 28 provinces in China, and then one person from each family is randomly chosen as the respondent. Because only the 2006 wave of the CGSS includes information on both send-down status and political participation, we only use data from this wave. We clear the CGSS-2006 data following similar procedures as for the CFPS data and its summary statistics are reported in Appendix Table A3. The bandwidth chosen using Imbens and Kalyanaraman (2012) technique is 10 years for the CGSS-2006 urban sample, which means people born between September 1951 and August 1971 are included. The tests for the continuity of the predetermined variables are shown in Appendix Figure A3 and columns (1) to (8) in Table A4 and the 1st stage regression results are reported in column (9) in Table A4. Figure A4 plots the distribution of send-down probability and voting in NPC elections.

use from the CGSS-2006 survey is a dummy variable indicating whether the respondent voted in the most recent grassroots NPC deputy election. It is constructed using the answer to the question in the CGSS-2006 survey asking, 'Did you vote in the most recent direct election of deputy of the National People's Congress?' The RD result in column (4) in Table 4 shows that people who were sent down have a 67.5-percentage-point lower probability of voting in the grassroots NPC deputy election, statistically significant at the 5 percent level. Send-down experience significantly reduces one's probability of participating in NPC election.

Controlling for Predetermined Variables. We also control for the predetermined variables in a local linear regression, including gender, minority status, and parents' literacy and political status. The results are shown in columns (5) to (7) in Table 4. The results are similar to the baseline results in Table 4.

Alternative Definition of Cohort. We use the running variable (birth cohort) in year units (remember that in this paper, one year spans from September of one calendar year to August of the next calendar year) instead of quarter units as a robustness check. The results are shown in columns (8) to (10) in Table 4, which demonstrate that the choice of birth cohort unit does not matter for our conclusion.

Alternative Bandwidths. To test the sensitivity of the estimate to the bandwidth choice, we try different bandwidths ranging from $h^* - 4$ to $h^* + 4$ to run the local linear regressions, where h^* denotes the optimal bandwidth chosen using the method of Imbens and Kalyanaraman (2012), that is, 12 years. We plot the point estimates and the 95 percent confidence intervals of the coefficients of interest in Figure 4, as in Carneiro et al. (2015). The point estimates remain negative and are very stable across different bandwidth choices, but the precision decreases as the bandwidth decreases.

[Figure 4]

The choice of the cutoff. As there was no unitary school starting age by law before the Compulsory Education Law launched in 1986, in the analysis above we use the same school starting age (8) as in Li et al. (2010) to determine the cutoff for RD. Appendix Figure A5 shows the distribution of the school starting ages of our sample and ensures the reasonability of this specification. Since we use IV estimate for fuzzy RD, the baseline estimates apply only to people complying with the school starting age 8 and the send-down policy, for whom we estimate a local average treatment effect (LATE).

To address the concern that our main results could be driven by this special specification (note that there are people beginning schooling at other ages), we use a 'donut-RD' approach to exclude observations born between September 1960 and August 1962 (that is, those born within one year around the cutoff, or the 'donut hole').[18] Thus, we can approximately treat the cutoff as located anywhere within the 'donut hole', so the youngest cohort on the left of the cutoff was born in August 1960, and the oldest cohort on the right in September 1962. Combining this with the schooling age pattern shown in Appendix Figure A5, it is reasonable to assume that most of the former (latter) cohort has (has not) begun schooling in 1969 and thus has (has not) finished junior high school in 1978 when the send-down movement ended.[19]

[18] The 'donut-RD' has been developed to check the sensitivity of the standard RD estimates to the observations near the cutoff (see Barreca et al., 2011; Eggers et al., 2018; Karbownik and Özek, 2018; Cattaneo et al., 2020, for more details about the 'donut RD').

[19] According to Appendix Figure A5, it's reasonable to assume that less than 20 percent of people born in September 1962 or later has begun schooling in 1969 when they did not reach age 7, and that more than 80 percent of people born in August 1960

The cutoff can therefore better distinguish whether one has finished junior high school and thus become eligible for being sent down in 1978.

As shown in Panel A of Table 5, we still find negative and statistically significant estimates with this approach.

[Table 5]

Global Polynomial Estimation. In the main analysis above, we exploit the nonparametric approach of RD design. Now we turn to the parametric approach, that is, the global polynomial estimation, to check the robustness of our findings. We use second-order polynomial regressions and include the whole sample in the regressions. The first-stage and reduced-form equations for the RD regression using second-order global polynomials are:

$$Send\_down_i = \alpha_1 + \beta_1 Eligible_i + f(c_i) + \delta_1 Eligible_i \times f(c_i) + \mathrm{u}_i$$

$$Y_i = \alpha_2 + \beta_2 Eligible_i + f(c_i) + \delta_2 Eligible_i \times f(c_i) + \varepsilon_i$$

where $f(c_i)$ is a second-order polynomial in birth cohort, $c_i - c_0$. The results in Panel B of Table 5 show that the results remain stable.

Local Polynomial Estimation. We also use a second-order local polynomial specification recommended by Gelman and Imbens (2018) as a robustness check. The regression function is the same as in the global polynomial estimation shown above, but the observations used are restricted to the bandwidth. The regression results in Panel C of Table 5 show negative effects of the send-down experience on political participation, and most of the estimates remain statistically significant under this specification.

5.4 Heterogeneous Effects

In the previous sections, we estimate the average effects of experiencing the send-down movement on individuals' political participation. In this section, we investigate how the effects differ across different dimensions.

Father's Political Status. We divide the sample into two groups according to one's father's political status, measured by whether the father was a member of any political party, and run the IV regressions for each group. The results are reported in Panel A of Table 6, where columns (1), (3), and (5) show the results for individuals whose fathers were not party members while columns (2), (4), and (6) show the results for those whose fathers were party members. We can see that the impacts of the send-down movement are stronger and statistically more significant on most measures of political participation if one's father was not a party member.

We explain this finding as the family privileges that a party-member father could provide to his child when the child was rusticated. In the countryside, the rusticated youth were not treated equally, and the hardness of one's experience and one's prospect of returning to the cities largely depended on one's family political background and connection with the countryside rural cadres (Bonnin and Horko, 2013). Under such circumstances, having a father with party membership meant that one came from a politically 'clean' family (*gen zheng miao hong*) and had better political connections with rural cadres. Therefore, (1) the rustication experience might have been less miserable for such individuals compared with those without party-affiliated fathers because the former were favored by local cadres, and (2) such individuals had more opportunities to get back to the cities through 'back-door' channels (Shi, 1996).

or earlier has begun schooling in 1969 when they reached age 9.

[Table 6]

Father's Education. We divide the sample into two groups by one's father's education level and run the IV regressions for each group. The results are reported in Panel B of Table 6, where columns (1), (3), and (5) show the estimates for individuals whose fathers were illiterate while columns (2), (4), and (6) show the results for those whose fathers had a primary school education or above. We can see that the impacts of the send-down movement are stronger on most measures of political participation for individuals whose fathers had a primary school education or above.

During the Cultural Revolution, intellectuals were ranked as the lowest level in the society and were insulted as 'the Stinky Ninth' (*chou lao jiu*).[20] 'More knowledge means more reactionary' became a common view on intellectuals (Zhou, 2014), and the Maoist doctrine taught that intellectuals should be 'reborn' through continuous criticism and self-criticism (Zhang et al., 2007). Therefore, rusticated youth from a literate family would have experienced more prosecution and unfair treatment in the countryside, leading to a greater decrease in subsequent political engagement.

Provincial Economic Development. We also consider how the effects differ across provinces with different levels of economic development. We group the provinces in which the respondents lived at age 12 into more developed areas and less developed areas by the sample median of provincial GDP per capita in 1965. According to the regression results in Panel C of Table 6, the adverse effects on voting in community elections and time spent on community activities are stronger and statistically more significant for people from more developed provinces than those from less developed provinces. There is no statistical difference in the effects on caring about public news between the two subsamples.

In general, the evidence shows that the send-down effect tends to be stronger for rusticated people from provinces with better economic conditions. The underlying reason is intuitive: compared with their peers sent from relatively poor areas, people from economically advanced areas were faced with a greater urban-rural gap after they were sent down. Thus, they may suffer more from the rustication experience.

6 Potential Mechanisms

Having established that the send-down experience has a significantly negative effect on political participation, we now turn to the underlying mechanisms. A variety of factors, including social, economic, and psychological variables can account for political participation. In our case, the send-down experience can influence political behaviors through different channels. First, the send-down experience may have changed a person's socioeconomic status, such as education, income, and jobs, indirectly influencing political behaviors. Second, as the rusticated youth suffered a lot in the countryside, the movement may have harmed their mental conditions, reducing their personal efficacy and internal political efficacy. Third, if the sent-down movement has reshaped one's understanding and attitudes about politics and the government in a bad view (for example, someone who was sent down may blame the government for their distressing rustication experience), then one's willingness to participate

[20] During the Cultural Revolution, Mao classified the revolution objects into nine classes, among which the intellectuals were at the lowest level and so there are insulted as 'the Stinky Ninth' (*chou lao jiu*).

in politics would be reduced. We investigate these three channels below.

6.1 Socioeconomic Status

The send-down movement may have affected individuals' political participation by changing their socioeconomic status (Gentzkow, 2006; Alesina and Giuliano, 2011). In this section, we use education, occupation, income, and self-reported social status to proxy for an individual's socioeconomic status and investigate whether the send-down movement affects these indicators. There is a large literature analyzing the impacts of education on political participation and showing that education can promote citizens' engagement in politics in both intensive and extensive margins.[21] Different occupation types correlate with different income levels and social relations, and social status is closely related with an individual's engagement with the government.

Education attainment is measured using two variables: education degree and schooling years.[22] Income is measured using personal total earnings in the last year.[23] Current occupations are categorized as follows: unemployed (including retired), agricultural work, self-employed, employed in a non-state-owned firm, employed in a state-owned firm, employed in a public organization (*shiye danwei*), and employed in a government agency. For perceived social status, in the CFPS respondents were asked 'What is your local social status?' The answers range from 1 ('very low') to 5 ('very high').

We use these variables as dependent variables to run the RD regressions. The results are shown in columns (1) to (5) in Table 7. All estimates are small in magnitude and statistically insignificant, showing that the rustication experience has little impact on subsequent social and economic outcomes. This is consistent with the findings of Zhou and Hou (1999), Gong et al. (2016), and Harmel and Yeh (2016).

[Table 7]

6.2 Mental Health Condition

Mental health is important in explaining political participation (Brady et al., 1995; Pacheco and Fletcher, 2015; Baicker and Finkelstein, 2018). Evidence from Ojeda (2015), Burden et al. (2016), and Couture and Breux (2017) shows that better mental health can improve people's participation in politics, because people with better mental conditions tend to have better personal efficacy and thus better internal political efficacy (Ojeda, 2015), or that better mental health can improve concentration on public topics rather than personal health issues (Pacheco and Fletcher, 2015).

The rusticated youth suffered greatly in the countryside, as there was a major urban-rural gap in China due to the priority of industrial development during Mao's period. Sent-down youth had to endure separation from their families and found it difficult to adapt to unfamiliar environments (Bonnin and Horko, 2013). They also faced a desperate future in the countryside. As one recalled, 'This hopeless life and unpromising future became the most repressive and killing part of the feelings of the sent-down youth' (Fan, 2013).[24] Therefore, the adverse effect

[21] See Wolfinger and Rosenstone (1980), Blais (2000), Wattenberg (2002), Milligan et al. (2004), and Dee (2004).

[22] The possible education levels are illiteracy, primary school, junior high school, high school, college, undergraduate, and graduate.

[23] We use ln(earning+1) as the dependent variable when running the regressions.

[24] Two anecdotes provide further evidence. In 1973, Qinglin Li from Fujian province, the father of a sent-down child, wrote a letter to Mao Zedong, pointing out that the sent-down youth faced many difficulties and unfair treatment in both their work and life. This received much attention from the central leaders and the public, and as a result many problems in the movement,

of send-down experience on political engagement may be attributed to the harmed mental conditions and psychological trauma of the rusticated youth due to their suffering in the countryside. We use the following two variables from CFPS-2010 to measure mental condition: (1) feeling hopeless about the future and (2) thinking life is meaningless. The values, as measures of frequency, are from 1 (never in the most recent month) to 5 (almost every day in the most recent month).[25] The regression results are reported in columns (6) and (7) in Table 7. The coefficients of send-down on feeling hopeless and thinking life is meaningless are positive and statistically significant, meaning that the send-down experience results in a poorer mental condition.

6.3 Attitudes Toward Government

Perception about government and politics is also an important determinant of political engagement (Pierson, 1993; Campbell, 2012). Attitudes toward politics and governments can be shaped or changed by experiences of events and policies under the control of the government (Soss, 1999), referred to as the 'interpretative effect' by Baicker and Finkelstein (2018). In our case, if the send-down experience altered people's perception about government and politics, for example, someone who was sent down may blame the government for their distressing rustication experience, their political participation would be affected as a result.

We use trust in local counties' officials to capture people's attitudes toward government (we have no measure about trust in central government). Although the send-down movement was initiated by the central government, local governments played an important role in the implementation, and educated the youths' experience during rustication was closely related to the local officials (Cai, 2003). According to the question 'please rate to what degree you trust local government officials,' which has values from 0 (highly distrust) to 10 (highly trust), we define a dummy variable to represent trust in local government, which takes the value of 1 if the degree to which the respondent trust local government officials is above 5 points. The regression results in column (8) in Table 7 show that the send-down experience has a negative effect on trust in local government, which is statistically significant at a level of 10 percent.

In summary, we find that poorer mental health and less trust in local government may be important mechanisms through which the send-down experience results in less political participation.

7 Conclusion

The functioning of a democratic society requires citizens' active engagement in politics, which is conductive to the making and implementation of policies. This paper uses the large-scale send-down movement in China as a natural experiment to study the impact of a political movement on political participation by exploiting the RD design.

Our results show that the send-down experience significantly reduces individuals'

including the physical and mental persecution of the urban youth, were exposed, shocking society (Cai, 2003). In the late 1970s and early 1980s, after the movement had ended, several literary works collectively known as 'scar literature' had as a theme the experience of the rusticated youth during the Cultural Revolution. These works dominated China's literary forum. By depicting the suffering of the rusticated youth, these works exposed the true face of the Cultural Revolution and the send-down movement to the public and brought public attention to the sufferers.

[25] Note that we have recoded the answers to the two variables from CFPS-2010 to let larger values represent worse mental health conditions.

political participation. This negative effect is stronger for rusticated people from politically disadvantaged families and more developed provinces. We also find that the send-down experience has no effect the rusticated people's socioeconomic status but results in their poorer mental health and less trust in local government, and we therefore suggest they are important channels through which the send-down experience negatively affects political participation.

Although our paper is based on the specific context of China in Mao's era, which could have limited replicability, the conclusions of our paper can still be generalized and applied to different settings. The send-down movement may be generalized as a political or social disorder, and the historical trauma discussed in the current paper may be generalized to any adolescent adversity that is out of personal control, so we may expect such adversities to exert a negative influence on political engagement. Thus, the findings of our study may help in the understanding of the potential effects of the conflicts in the Middle East and the social disorder caused by the Arab Spring, which both place young people in great adversity.[26]

The findings of this paper have important policy implications. Traditional wisdom believes that public policies have an important impact on an individual's education and health. This paper shows that adolescent experiences of public policy and political movements exert an important influence on political engagement in adulthood and influence the democratic construction of a nation. Government policies and institutions are key for social stability and development (Acemoglu and Robinson, 2001; Bai and Jia, 2016), and young people are often the protagonists of reforms and revolutions (Huntington, 1996). Therefore, the government must pursue favorable public policies for young people to foster the nation's democratic development and stability.

[26] The Arab Spring was a revolutionary wave of both violent and non-violent demonstrations, protests, riots, coups, foreign interventions, and civil wars in North Africa and the Middle East that began on December 18, 2010 in Tunisia with the Tunisian Revolution (See https://en.wikipedia.org/wiki/Arab_Spring).

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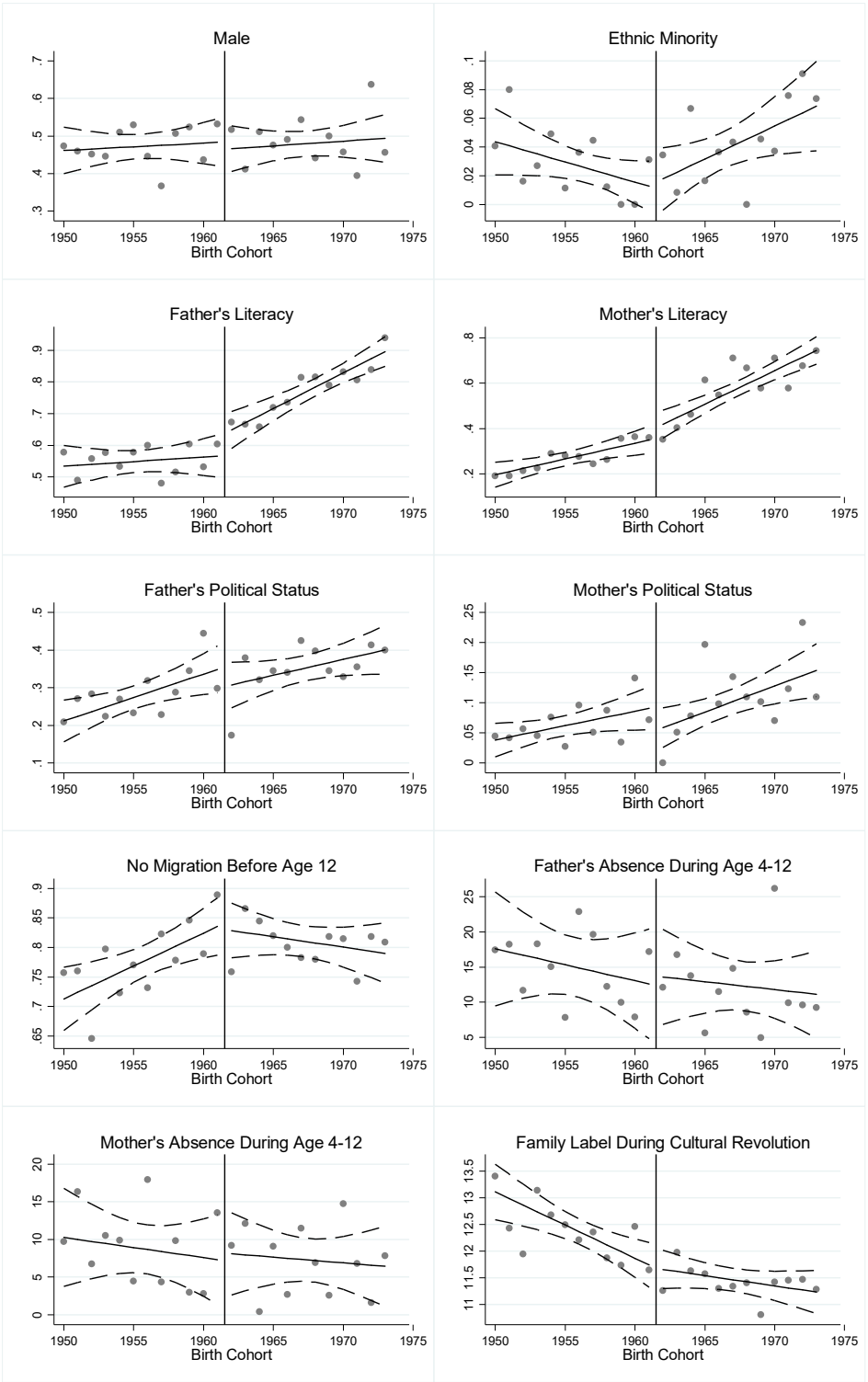
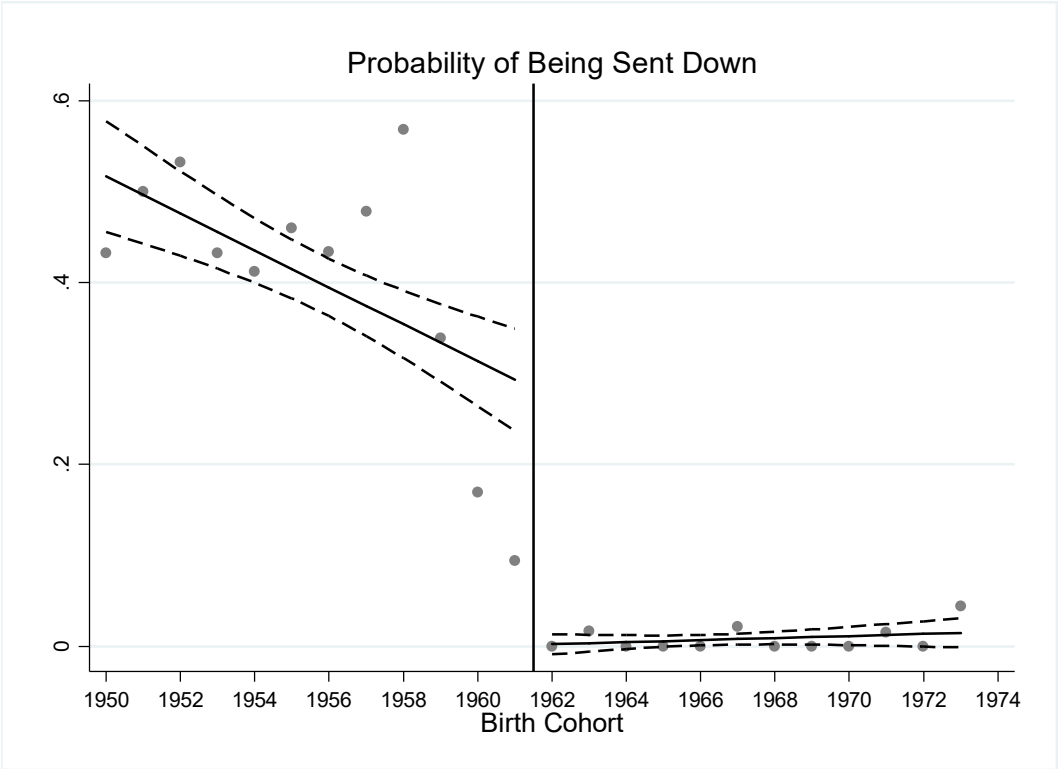
Figure 1. Distribution of Predetermined Variables



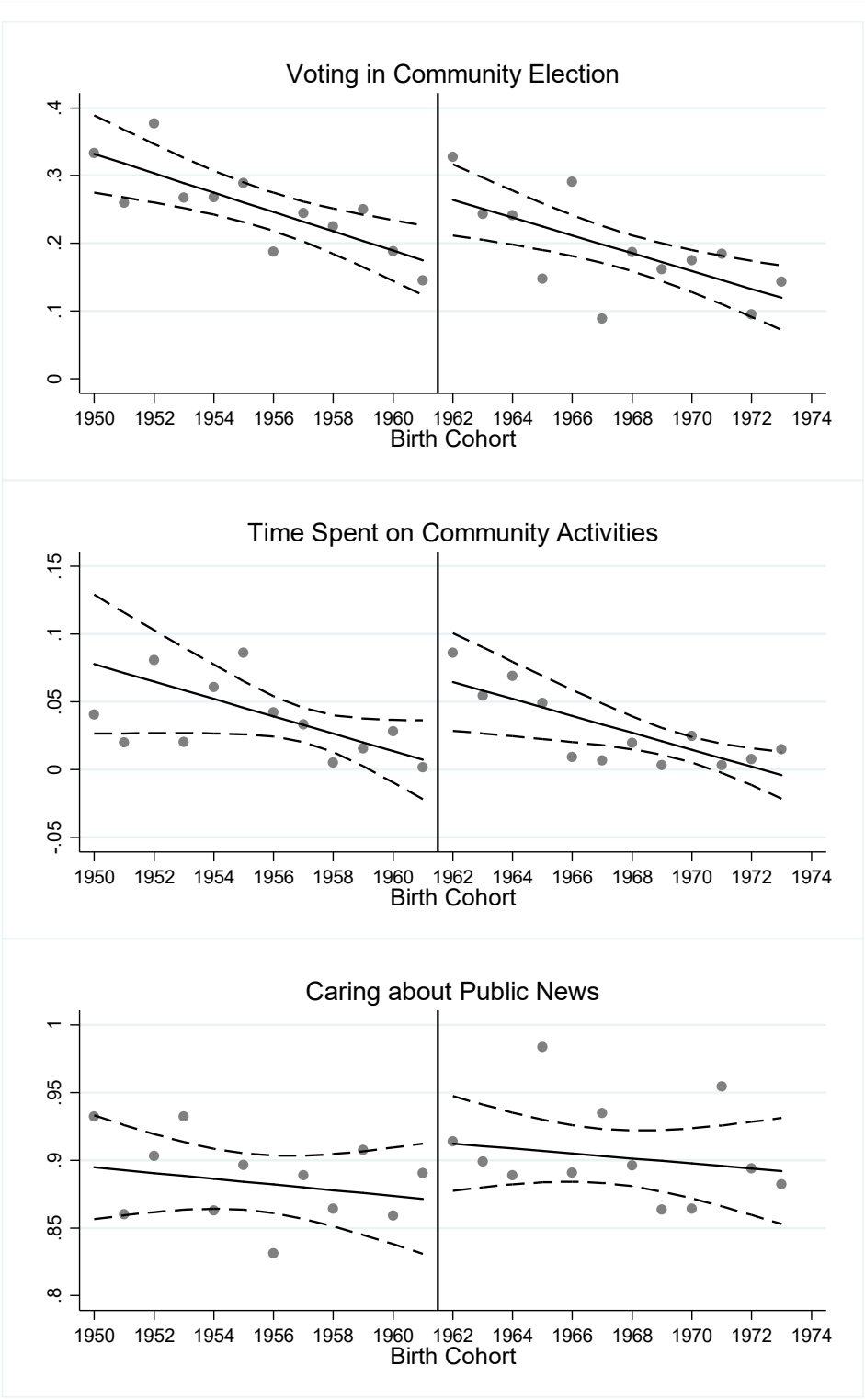
Note: The dots represent the means of predetermined variables for each birth cohort year for the urban sample. The solid lines are fitted values using a local linear regression with a bandwidth of 12 years. The dashed lines mark the 95 percent confidence interval.

Figure 2. Distribution of Send-down Probability



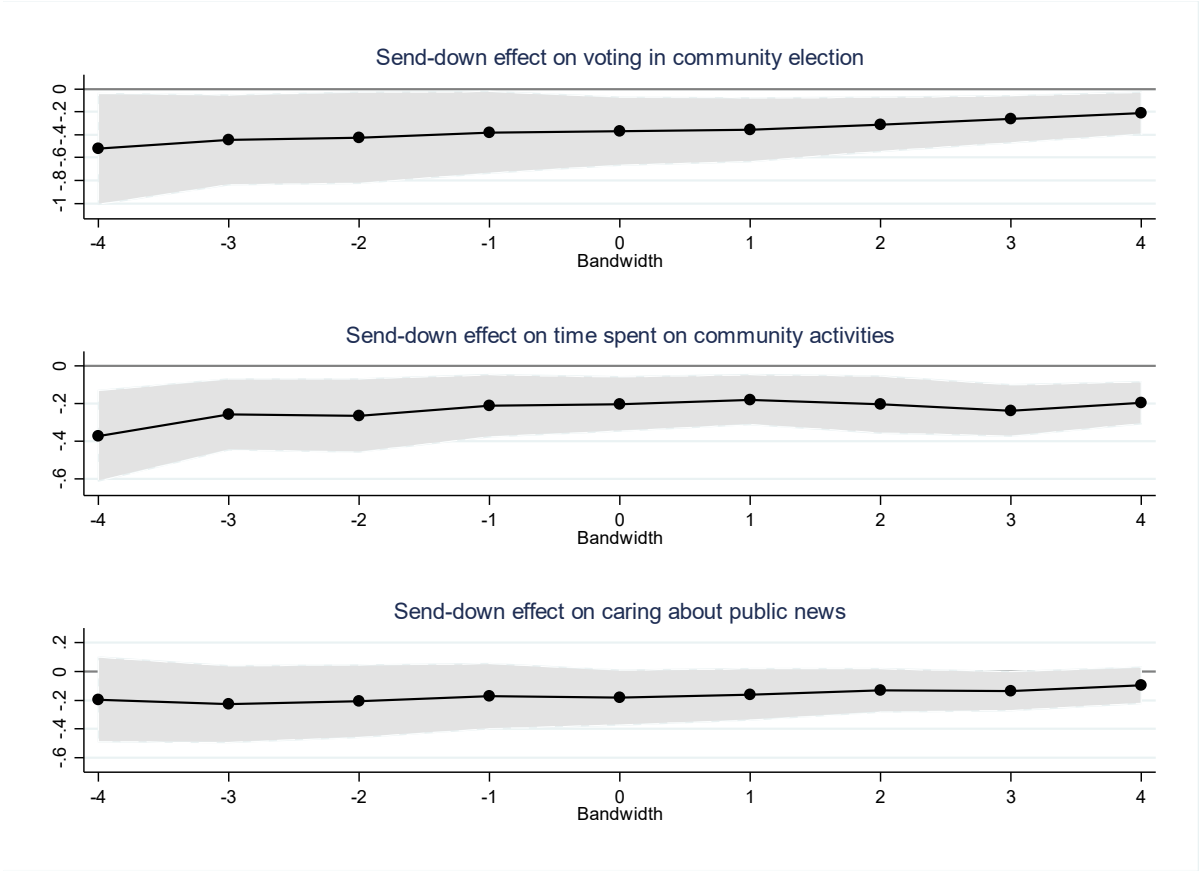
Note: The dots represent the share of people who were sent down for each birth cohort year for the urban sample. The solid lines are fitted values using a local linear regression with a bandwidth of 12 years. The dashed lines mark the 95 percent confidence interval.

Figure 3. Distribution of Political Participation Variables



Note: The dots represent the means the outcome variables for each birth cohort year for the urban sample. The lines are fitted values using a local linear regression with a bandwidth of 12 years. The dashed lines mark the 95 percent confidence interval.

Figure 4. Estimated Effects of the Send-down Experience for Different Bandwidths



Note:

(1) The x-axis is the deviation from h^*, the optimal bandwidth calculated using the method of Imbens and Kalyanaram (2012), 12 years. For example, -4 corresponds to 8 years. The y-axis is the estimated coefficient using the IV regression.

(2) The solid lines show the point estimates using different bandwidths and the shadow border represents the 95 percent confidence interval.

Table 1. Summary Statistics：CFPS Urban Sample

Variables	Mean	S.D.	N
Probability of being sent down	0.21	0.41	1,770
Political participation variables			
Voting in community committee election	0.23	0.42	1,715
Time spent on community and public service activities (hours per day)	0.04	0.25	1,766
Caring about political news	0.89	0.31	1,770
Predetermined variables			
Gender (male=1)	0.48	0.50	1,770
Ethnic minority	0.04	0.18	1,770
Father's literacy	0.66	0.47	1,583
Mother's literacy	0.42	0.49	1,650
Father's political status (member of any party=1)	0.31	0.46	1,559
Mother's political status (member of any party=1)	0.08	0.28	1,583
No migration experience before age 12	0.79	0.41	1,767
Father's absence during ages 4-12 (weeks)	13.82	58.41	1,747
Mother's absence during ages 4-12 (weeks)	8.07	46.78	1,760
Family label during 'Cultural Revolution'	11.96	3.49	1,713

Note：

(1) The definition of urban and *hukou* is based on the *hukou* type at age 12.

(2) The sample include people born between September 1949 and August 1973.

Table 2. Continuity of Predetermined Variables

Variables	Gender	Ethnic minority	Father's literacy	Mother's literacy	Father's political status	Mother's political status	No migration before age 12	Father's absence	Mother's absence	Family label
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Eligible	0.033	-0.002	-0.067	-0.053	0.053	0.037	0.010	-0.017	-0.240	0.031
	(0.049)	(0.016)	(0.041)	(0.039)	(0.044)	(0.031)	(0.034)	(4.886)	(3.836)	(0.335)
N	1,762	1,762	1,576	1,643	1,553	1,577	1,759	1,740	1,752	1,705
Control mean	0.517	0.035	0.673	0.352	0.173	0.000	0.759	12.14	9.172	11.26

Note:

(1) Local linear regressions with a bandwidth of 12 years are used, and all regressions control for the linear trend of birth cohort and its interaction with Eligible, and dummies for quarter of birth.

(2) Control mean denotes the mean values of the dependent variables for people born within one year after the cutoff.

(3) Numbers in the parentheses are standard errors clustered at the birth cohort level.

(4) *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.

Table 3. Baseline Results

Variables	Send-Down	Voting in community election	Time spent on community activities	Caring about public news
	(1)	(2)	(3)	(4)
Panel A. First stage and reduced-form results				
Eligible	0.286***	-0.103***	-0.058***	-0.052*
	(0.050)	(0.037)	(0.020)	(0.027)
F value (IV validity)	32.08			
N	1,762	1,707	1,758	1,762
Control mean	0.000	0.327	0.086	0.914
Panel B. IV results				
Send-Down (Eligible used as an IV)		-0.368**	-0.203***	-0.181*
		(0.153)	(0.073)	(0.097)
N		1,707	1,758	1,762
Control mean		0.327	0.086	0.914

Note:

(1) Local linear regressions with a bandwidth of 12 years are used, and all regressions control for the linear trend of birth cohort and its interaction with Eligible, and dummies for quarter of birth.

(2) Control mean denotes the mean values of the dependent variables for people born within one year after the cutoff.

(3) Numbers in the parentheses are standard errors clustered at the birth cohort level.

(4) *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.

Table 4. Robustness (1): Different Definitions and Control Variables

	Alternative Definition for Dependent Variables			CGSS-2006 Data	Controlling Predetermined Variables			Alternative Definition of Cohort		
Variables	Voluntary voting in community election	Whether participating in community activities	Narrow definition of caring about public news	Voting in NPC deputy election	Voting in community election	Time spent on community activities	Caring about public news	Voting in community election	Time spent on community activities	Caring about public news
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Send-Down (Eligible used as an IV)	-0.267**	-0.101*	-0.189	-0.675**	-0.408**	-0.177*	-0.216**	-0.435**	-0.232***	-0.198*
	(0.123)	(0.055)	(0.144)	(0.316)	(0.166)	(0.092)	(0.105)	(0.177)	(0.083)	(0.109)
N	1,708	1,758	1,762	1,715	1,453	1,478	1,482	1,707	1,758	1,762
Control mean	0.182	0.069	0.776	0.353	0.327	0.086	0.914	0.327	0.086	0.914

Note:

(1) IV results are reported, where Send-Down is instrumented with Eligible. Alternative definition of cohort in columns 8 to 10 means the running variable, birth cohort, is defined in year units. (2) Local liner regressions are used, with the bandwidth of 12 years for the CFPS sample and 10 years for the CGSS sample. All regressions control for the linear trend of birth cohort and its interaction with Eligible, and dummies for quarter of birth. In columns 5 to 7, we additionally control for predetermined variables including gender, minority status, and parents' literacy and political status. (3) Control mean denotes the mean values of the dependent variables for people born within one year after the cutoff. (4) Numbers in the parentheses are standard errors clustered at the birth cohort level. (5) *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.

Table 5. Robustness (2): Donut RD and Polynomial Estimation

Variables	Voting in community election	Time spent on community acitivities	Caring about public news
	(1)	(2)	(3)
Panel A. Donut RD (excluding observations born between September 1960 and August 1962)			
Send-Down (Eligible used as an IV)	-0.219*	-0.150**	-0.146*
	(0.119)	(0.063)	(0.089)
N	1,598	1,645	1,648
Control mean	0.262	0.0459	0.883
Panel B. global quadratic polynomials regression			
Send-Down (Eligible used as an IV)	-0.512**	-0.510***	-0.214
	(0.260)	(0.168)	(0.183)
N	2,966	3,116	3,121
Control mean	0.327	0.086	0.914
Panel C. local quadratic polynomials regression			
Send-Down (Eligible used as an IV)	-0.770*	-0.507*	-0.145
	(0.459)	(0.261)	(0.244)
N	1,707	1,758	1,762
Control mean	0.327	0.0862	0.914

Note:

(1) All regressions control for the linear trend of birth cohort and its interaction with Eligible, and dummies for quarter of birth. In the global and local polynomial specification, we additionally control for a second-order polynomial of birth cohort and its interactions with Eligible.

(2) Control mean denotes the mean values of the dependent variables for people born within one year after the cutoff.

(3) Numbers in the parentheses are standard errors clustered at the birth cohort level.

(4) *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.

Table 6. Heterogeneous Analysis

Variables	Voting in community election		Time spent on community activities		Caring about public news	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Father's political status						
	Non-party member	*Party member*	*Non-party member*	*Party member*	*Non-party member*	*Party member*
Send-Down (Eligible used as an IV)	-0.485***	-0.095	-0.193*	-0.076	-0.168	-0.321
	(0.186)	(0.287)	(0.103)	(0.172)	(0.122)	(0.223)
N	1,044	477	1,062	487	1,065	488
Control mean	0.372	0.111	0.116	0.000	0.884	1.000
Panel B. Father's Education						
	Illiterate	*Literate*	*Illiterate*	*Literate*	*Illiterate*	*Literate*
Send-Down (Eligible used as an IV)	-0.223	-0.419**	-0.298	-0.122	-0.003	-0.316**
	(0.234)	(0.209)	(0.181)	(0.092)	(0.144)	(0.142)
N	522	1,013	536	1,036	536	1,040
Control mean	0.353	0.333	0.235	0.029	0.941	0.914
Panel C. Economic Condition of Provinces Where Growing Up						
	Less developed	*More developed*	*Less developed*	*More developed*	*Less developed*	*More developed*
Send-Down (Eligible used as an IV)	0.146	-0.568***	0.038	-0.312***	-0.286	-0.148
	(0.259)	(0.197)	(0.043)	(0.109)	(0.185)	(0.104)
N	488	1,201	508	1,232	509	1,235
Control mean	0.200	0.375	0	0.119	0.938	0.905

Note: (1) IV results are reported, where Send-Down is instrumented with Eligible. Local linear regressions with a bandwidth of 12 years are used, and all regressions control for the linear trend of birth cohort and its interaction with Eligible, and dummies for quarter of birth.

(2) Control mean denotes the mean values of the dependent variables for people born within one year after the cutoff.

(3) Numbers in the parentheses are standard errors clustered at the birth cohort level.

(4) *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.

Table 7. Possible Mechanisms

Variables	Education degree	Schooling years	Occupation type	Log (earning+1)	Perceived social status	Hopeless about the future	Thinking life is meaningless	Trust on local government officials
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Send-Down (Eligible used as an IV)	-0.130	0.447	-0.986	-0.177	-0.063	0.581**	0.641***	-0.283*
	(0.357)	(1.087)	(0.690)	(1.403)	(0.285)	(0.254)	(0.236)	(0.165)
N	1,759	1,762	1,711	1,755	1,760	1,760	1,759	1,688
Control mean	3.596	9.759	2.054	7.585	2.431	1.276	1.241	0.164

Note:

(1) IV results are reported, where Send-Down is instrumented with Eligible.

(2) Local linear regressions with a bandwidth of 12 years are used, and all regressions control for the linear trend of birth cohort and its interaction with Eligible, and dummies for quarter of birth.

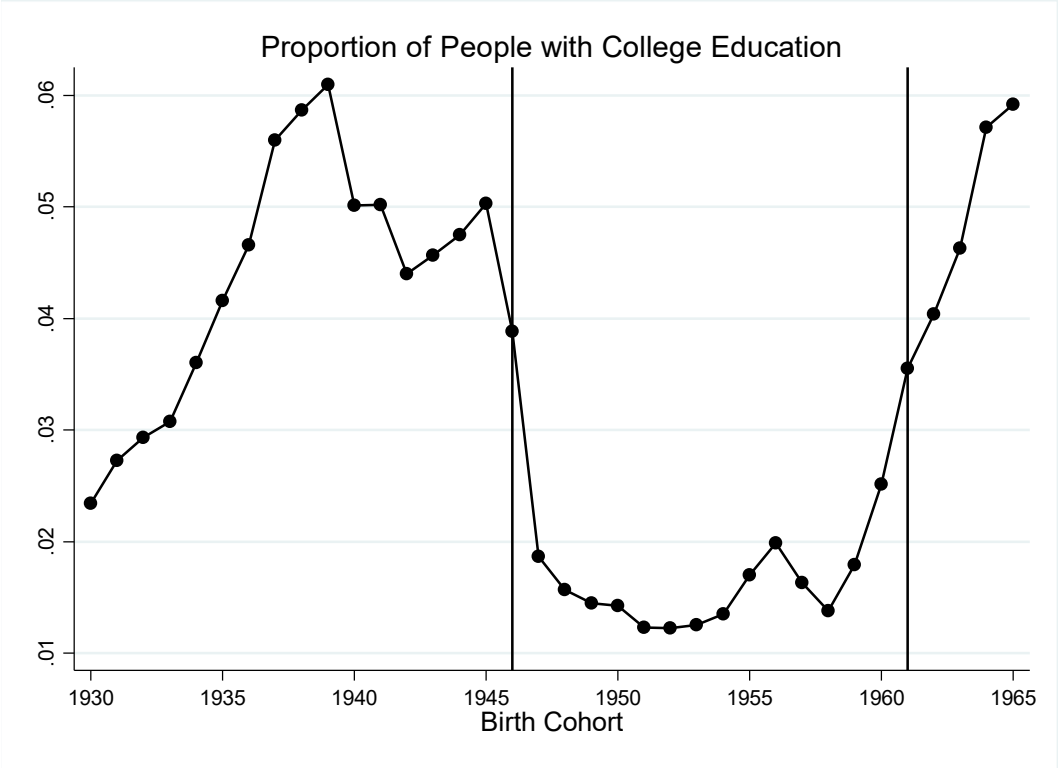
(3) Control mean denotes the mean values of the dependent variables for people born within one year after the cutoff.

(4) Numbers in the parentheses are standard errors clustered at the birth cohort level.

(5) *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.

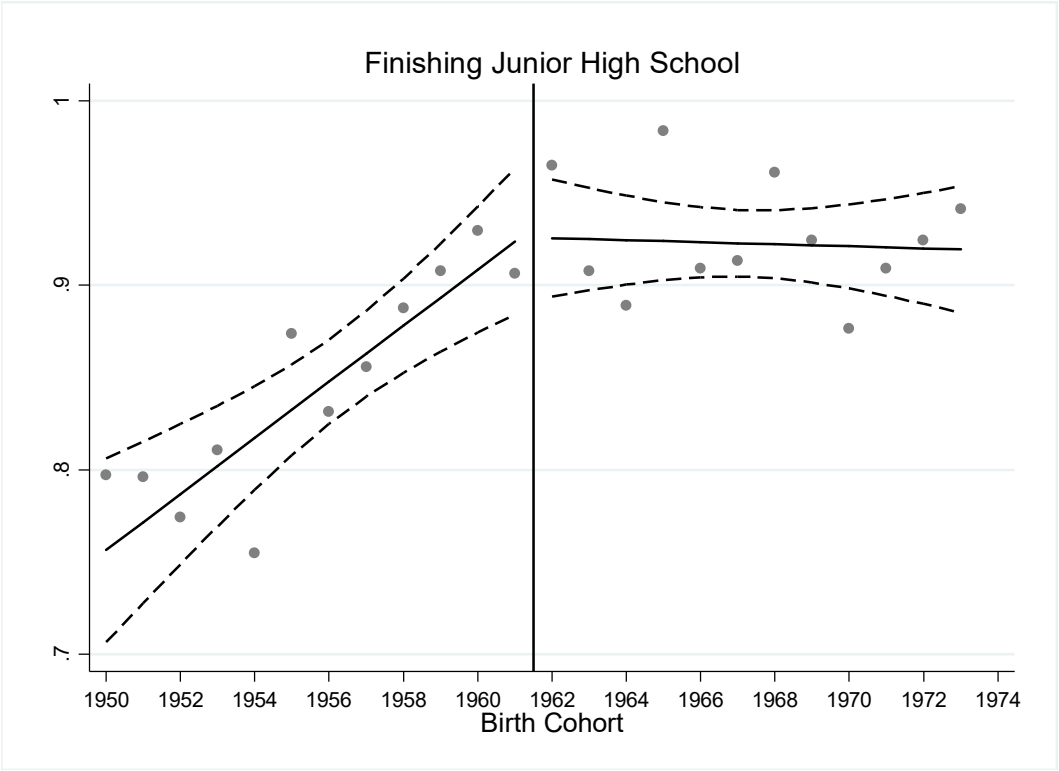
Appendix

Appendix Figure A1. Proportion of People with College Education by Birth Cohort



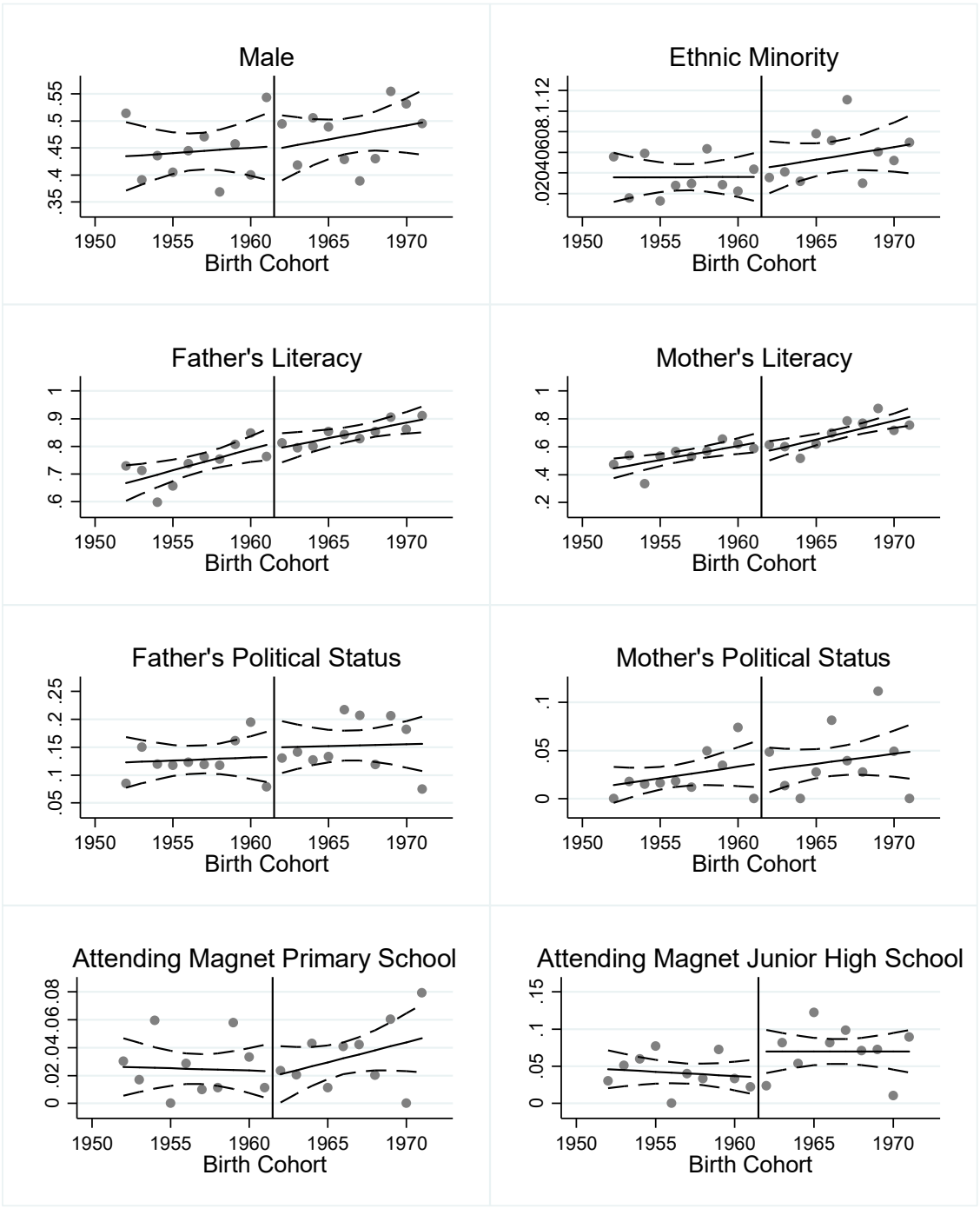
Note: Computed by the authors using a 1% sample of 1990 population census of China.

Appendix Figure A2. Continuity of Finishing Junior High School Around the Cutoff



Note: The dots represent the means the outcome variables for each birth cohort year for the urban sample. The solid lines are fitted values using a local linear regression with a bandwidth of 12 years. The dashed lines mark the 95 percent confidence interval.

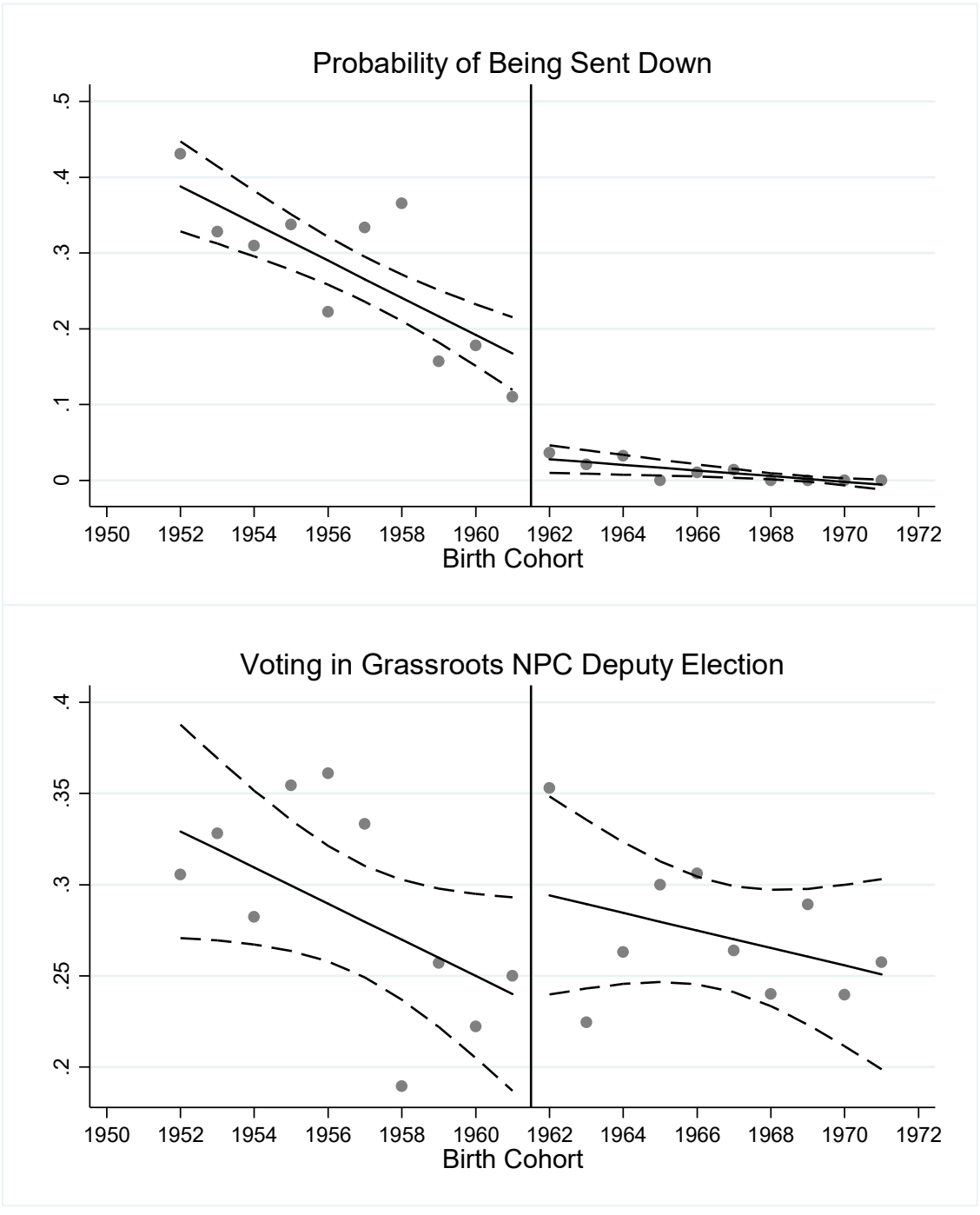
Appendix Figure A3. Distribution of Predetermined Variables for the CGSS-2006 Urban Sample



Note:

The dots represent the means the outcome variables for each birth cohort year for the urban sample. The solid lines are fitted values using a local linear regression with a bandwidth of 10 years. The dashed lines mark the 95 percent confidence interval.

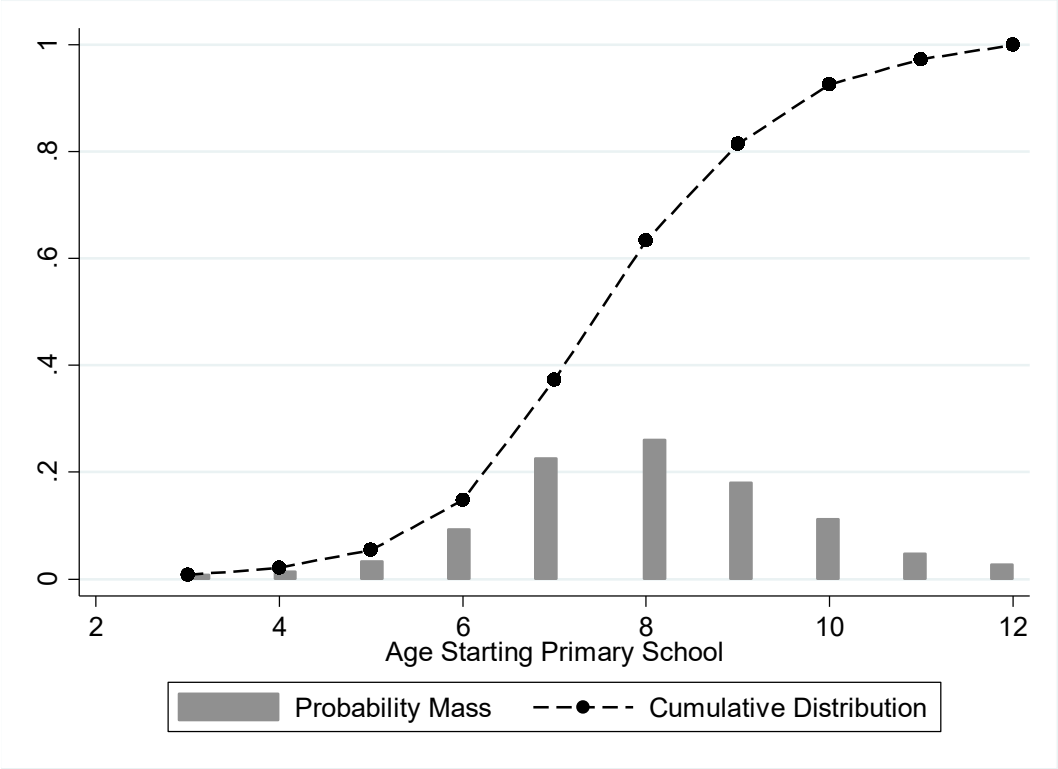
Appendix Figure A4. Distribution of Send-down Probability and Voting behavior for the CGSS-2006 Urban Sample



Note:

The dots represent the means the outcome variables for each birth cohort year for the urban sample. The solid lines are fitted values using a local linear regression with a bandwidth of 10 years. The dashed lines mark the 95 percent confidence interval.

Appendix Figure A5. Distribution of Ages of Starting Primary School



Note: Computed by the authors using CFPS. The sample include people born between September 1949 and August 1973.

Appendix Table A1. Summary Statistics for the CFPS Rural Sample

Variables	Mean	S.D.	N
Probability of being sent down	0.00	0.07	11,854
Political participation variables			
Voting in village committee election	0.55	0.50	11,210
Time spent on community and public service activities (hours per day)	0.02	0.20	11,829
Caring about political news	0.68	0.47	11,854
Predetermined variables			
Gender (male=1)	0.48	0.50	11,854
Ethnic minority	0.08	0.27	11,827
Father's literacy	0.40	0.49	10,193
Mother's literacy	0.16	0.37	10,872
Father's political status (member of any party =1)	0.16	0.36	10,343
Mother's political status (member of any party =1)	0.02	0.15	10,553
No migration before age 12	0.97	0.17	11,851
Father's absence during ages 4-12 (weeks)	13.29	61.48	11,620
Mother's absence during ages 4-12 (weeks)	8.18	50.33	11,673
Family label during 'Cultural Revolution'	10.56	1.76	11,588

Note：

(1) The definition rural *hukou* is based on the *hukou* type at age 12.

(2) The sample includes people born between September 1949 and August 1973.

Appendix Table A2. RD-DD Specification

Variables	First Stage	IV		
	Send-Down	Voting in community/village election	Time spent on community/village acitivities	Caring about public news
	(1)	(2)	(3)	(4)
Eligible×*hukou*	0.284***			
	(0.051)			
Send-Down (Eligible×*hukou* used as an IV)		-0.393**	-0.204**	-0.258**
		(0.190)	(0.087)	(0.112)
F value (IV validity)	31.45			
N	13,552	13,552	13,552	13,552
Control mean	0.008	0.513	0.014	0.706

Note:

(1) We define $hukou_i$ as a dummy variable representing the *hukou* status at age 12 (we assign $Hukou_i$ the value of 1 for people with urban *hukou* at age 12)., the first-stage and reduced-form equations are constructed as following, in the spirit of Deshpande (2016):

$Send\_down_i = \alpha_3 + \beta_3 Eligible_i + \gamma_3(c_i - c_0) + \delta_3 Eligible_i \times (c_i - c_0) + \alpha_{31} Hukou_i + \beta_{31} Eligible_i \times Hukou_i + \gamma_{31}(c_i - c_0) \times Hukou_i + \delta_{31} Eligible_i \times (c_i - c_0) \times Hukou_i + u_i$,

$Y_i = \alpha_4 + \beta_4 Eligible_i + \gamma_4(c_i - c_0) + \delta_4 Eligible_i \times (c_i - c_0) + \alpha_{41} Hukou_i + \beta_{41} Eligible_i \times Hukou_i + \gamma_{41}(c_i - c_0) \times Hukou_i + \delta_{41} Eligible_i \times (c_i - c_0) \times Hukou_i + \varepsilon_i$.

Then, $\hat{\beta}_{RD-DD} = \frac{\hat{\beta}_{41}}{\hat{\beta}_{31}}$. Controlling for $Hukou_i$ helps to eliminate inherent and time fixed urban-rural differences with respect to political behaviors, and $(c_i - c_0) \times Hukou_i$ helps to control for the different development trajectories and experiences between urban and rural citizens because of the urban-rural gap that has existed throughout China's reforms and development.

(2) Local linear regressions with a bandwidth of 12 years are used. All regressions additionally control for dummies for quarter of birth.

(3) Control mean denotes the mean values of the dependent variables for people born within one year after the cutoff.

(4) Numbers in the parentheses are standard errors clustered at the birth cohort level. The standard errors of RD-DD regressions are calculated using the delta method.

(5) *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.

Appendix Table A3. Summary Statistics for the CGSS-2006 Urban Sample

Variables	Mean	S.D.	N
Probability of being sent down	0.14	0.34	1,735
Voting in grassroots NPC deputy election	0.28	0.45	1,754
Predetermined variables			
Gender (male=1)	0.46	0.50	1,754
Ethnic minority	0.05	0.21	1,754
Father's literacy	0.79	0.41	1,404
Mother's literacy	0.61	0.49	1,332
Father's political status (any party member=1)	0.14	0.35	1,410
Mother's political status (any party member=1)	0.03	0.18	1,339
Attending magnet primary school	0.03	0.17	1,725
Attending magnet junior high school	0.06	0.23	1,725

Note：

(1) The definition of urban *hukou* is based on the *hukou* type at age 12.

(2) The sample includes people born between September 1951 and August 1971.

Appendix Table A4. Continuity of Predetermined Variables and First Stage Result: CGSS-2006 Urban Sample

Variables	Gender	Ethnic minority	Father's literacy	Mother's literacy	Father's political status	Mother's political status	Magnet primary school	Magnet junior high school	Send-down experience
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Eligible	0.015	-0.009	0.022	0.074	-0.024	0.012	0.003	-0.035*	0.131***
	(0.057)	(0.018)	(0.037)	(0.056)	(0.046)	(0.019)	(0.016)	(0.021)	(0.029)
F value (IV validity)									63.45
N	1,733	1,733	1,387	1,317	1,393	1,324	1,705	1,705	1,715
Control mean	0.494	0.035	0.812	0.613	0.130	0.048	0.024	0.024	0.036

Note:

(1) Local linear regressions with a bandwidth of 10 years are used, and all regressions control for the linear trend of birth cohort and its interaction with Eligible, and dummies for quarter of birth.

(2) Control mean denotes the mean values of dependent variables for people born within one year after the cutoff.

(3) Numbers in the parentheses are standard errors clustered at the birth cohort level.

(4) *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.