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Do College Graduates Serving as Village Officials Help Rural China?†

By Guojun He and Shaoda Wang*

This study estimates the effect of improved bureaucrat quality on poverty alleviation by exploring a unique human capital reallocation policy in China—the College Graduate Village Officials (CGVOs) program. We find that introducing CGVOs into the village governance system improves the targeting and implementation of the central government's social assistance programs. CGVOs help eligible poor households understand and apply for relevant subsidies, thus increasing the number of pro-poor program beneficiaries. Further analysis suggests that CGVOs change bureaucrat quality, rather than quantity, of village governance, and their presence reduces elite capture of pro-poor programs. (*JEL* D73, H83, J24, O17, O18, P25, P26)

Does bureaucrat quality matter for development? At the macro level, research finds that political leaders play important roles in shaping the growth of nations (Jones and Olken 2005; Besley, Montalvo, and Reynal-Querol 2011). At the micro level, evidence suggests that the quality of local government officials is critical for the implementation of policies and the delivery of public services (Martinez-Bravo 2014; Bloom, Sadun, and Van Reenen 2014; Bloom et al. 2015; Munshi and Rosenzweig 2015; Rasul and Rogger, forthcoming; Yao and Zhang 2015).

This paper provides new empirical evidence on the effect of improved bureaucrat quality on policy implementation by evaluating a unique human capital reallocation program in China—the College Graduate Village Officials program. Under this program, the Chinese government hires a large number of university graduates each year and assigns them to rural villages, where they serve as assistants to the elected village chairpersons or the appointed village party secretaries. These young village leaders are referred to as College Graduate Village Officials (CGVOs). The central government hopes that these CGVOs, who are more educated and independent from local interest groups, can help improve village governance and alleviate poverty.

* He: Division of Social Science, Division of Environment and Sustainability, and Department of Economics, The Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, HK (email: gjhe@ust.hk); Wang: University of California at Berkeley, 241 Giannini Hall, Berkeley, CA 94720 (email: shaoda@berkeley.edu). We are indebted to Alain de Janvry and Elisabeth Sadoulet for their support throughout this project. We would also like to thank Esther Duflo, Frederico Finan, Wei Huang, Albert Park, Jeffrey Perloff, Kellee Tsai, Jin Wang, Yang Xie, Lunyu Xie, Yueran Zhang, three anonymous referees, and seminar participants at HKUST, the CES 2015 Annual Meeting, the Young Scholars Conference at UCSD, and the 2016 NEUDC Conference at MIT for their insightful comments. Financial support from HKUST Initiation Grant (IGN14HS02) is gratefully acknowledged. Any remaining errors are solely ours.

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The CGVO program fits into a village governance system that is both democratic and autocratic. In this system, a village has two self-governing bodies: a village committee usually consisting of three to seven members and a village party branch consisting of several Chinese Communist Party (CCP) members. The village chairperson, who has been democratically elected since village elections were introduced in the mid-1980s, leads the village committee. The village party secretary, however, is usually appointed by the township-level government and leads the village party branch. Studies have shown that China's introduction of village elections has led to increased political accountability and public goods provision (Zhang et al. 2004, Martinez-Bravo et al. 2011, Martinez-Bravo et al. 2014). However, at the same time, since the village chairpersons often come from the largest village clans, and these dominant family clans are able to exercise considerable influence over electoral outcomes and public resource allocation (O'Brien and Han 2009, Xu and Yao 2015), poor villagers, especially the poorest among the poor, may be underrepresented in the existing village governance system.

The concern that rural governance is less accountable to the poor is not unique to the Chinese context. Due to asymmetric information and high monitoring costs, it is often difficult for higher levels of government to precisely target the poor population in local villages. As a consequence, higher levels of government have to rely on local insiders, who are supposedly better informed, to implement pro-poor programs. Previous research confirms that such decentralization can reduce monitoring costs and improve the targeting of pro-poor programs (Klugman 1997, Alderman and Lindert 1998; Coudouel, Marnie, and Micklewright 1998; Bird and Rodrigues 1999; Ravallion 1998; Alderman 2001). However, due to a lack of political accountability, empowering local administrators also increases the risk of corruption (Seabright 1996, World Bank 2003, Olken and Pande 2011, Ferraz and Finan 2011). In addition, since there is often no self-targeting mechanism embedded into these pro-poor programs, the nonpoor households are also strongly incentivized to capture the program benefits for themselves (see, for examples, Besley, Pande, and Rao 2012; Caeyers and Dercon 2012; Alatas et al. 2013; Niehaus et al. 2013). In the end, the lion's share of the benefits from these programs may be captured by local administrators and nonpoor households, while the neediest poor households gain little from them.

Given the trade-off between local information and accountability in rural governance, the introduction of CGVOs into villages may provide a unique opportunity for more pro-poor development. On the one hand, CGVOs live and work in the villages and handle village affairs on a daily basis. They are better informed than outsiders and can therefore improve policy targeting for social assistance programs. On the other hand, CGVOs are urban educated, have no ex ante political ties to local interest groups, and are therefore likely to be more accountable than local officials. The majority aspire to work as civil servants at higher levels of government after finishing their terms, and this career incentive deters CGVOs from engaging in corruption. Moreover, although CGVOs serve as assistants to the local village chairpersons or village party secretaries, their performances are evaluated by higher (township) levels of government. This incentivizes CGVOs to respond to the interests of the villagers they represent (or the townships evaluating them), which may or may not be aligned with those of local village leaders.

The CGVO program is ambitious in scale and has been expanding rapidly. In 2012, CGVOs were assigned to more than 30 percent of Chinese villages, and the central government ultimately seeks to hire roughly 700,000 CGVOs, at least 1 per village. Yet, controversies have arisen as the program has expanded. For example, there are concerns that this program could be a misallocation of human capital: since most CGVOs are not trained to work in rural areas, their knowledge and experience of local governance and poverty alleviation can be extremely limited. Likewise, despite the tremendous costs of running the CGVO program, no rigorous impact evaluation or cost analysis has been conducted. As a result, maintaining or expanding the CGVO program could lead to significant losses in efficiency.

In this paper, we combine several unique sources of information and provide a rich set of qualitative and quantitative evidence on the impacts of the CGVO program. To understand the roles that CGVOs play in rural governance, we conducted a case study in Yuncheng of Shanxi province. We interviewed 56 CGVOs in 12 townships, obtained access to detailed administrative documents related to the CGVO program, and conducted an online survey answered by 513 CGVOs. The case study demonstrates that CGVOs were heavily involved in the implementation process of various existing social assistance programs. Specifically, they helped target the most vulnerable households and provided assistance in their applications to various government subsidies. They could also reduce elite capture by ensuring that these subsidies were assigned strictly according to administrative rules.

In addition to the case study, we participated in the design and implementation of a large cross-sectional survey covering 1,489 nationally representative villages in China. Examining the survey data, we find that all of the stakeholders (poor households, regular villagers, and CGVOs themselves) agree that CGVOs can better implement existing pro-poor policies to help poor households, confirming our findings in the case study.

To credibly estimate the causal impacts of the CGVO program, we obtained the 12-year panel data (2000–2011) for 255 representative Chinese rural villages and matched them to a retrospective CGVO survey that we conducted in 2012. We exploit the staggered timing of the assignment of CGVOs to different villages and estimate the impacts of the CGVO program using a difference-in-differences (DID) model. Motivated by findings from the case study and the cross-sectional survey, we focus on the impacts of CGVOs on the implementation of existing pro-poor policies. Our analysis shows that in villages with CGVOs more households are registered as poor, and more villagers are registered as having disabilities in the administrative files, which can improve their access to relevant social assistance programs. More importantly, we find that poor households indeed benefit from these policies. In villages with CGVOs, more poor households receive poverty subsidies, and more dilapidated houses are renovated with government aid. These findings confirm our qualitative observation that CGVOs help rural residents benefit from various social assistance programs by improving policy promotion and targeting.

We investigate the underlying mechanisms of the CGVOs' impacts by analyzing several other outcome variables. First, we rule out the possibility that CGVOs weaken the rural economy and thus make more households poorer and qualified

for the social assistance programs. We find that per capita rural net income and per capita village business revenue are not affected by the CGVO program. There is also no evidence that CGVOs can help rural residents develop more or less diversified income sources. We also rule out the possibility that CGVOs make village councils richer so that more poor households can be internally subsidized. In fact, village fiscal revenue, village fiscal expenditure, and village collective business revenue are not affected by the CGVO program.

Second, we test whether the CGVOs' effects are simply driven by the introduction of an additional official to the village governance system. It turns out that in villages with CGVOs the village council size remains unchanged, but the average education level of village officials increases. These results imply that a CGVO crowds out a less-educated existing village official. It is therefore more appropriate to interpret the CGVOs' impacts as resulting from an improvement in bureaucrat quality, rather than quantity.

Third, we investigate how CGVOs affect elite capture. Our analysis shows that not only do more people receive subsidies in villages with CGVOs (extensive margin), but they also receive larger subsidies on average (intensive margin) in villages with CGVOs. This finding suggests that the presence of CGVOs reduces elite capture of pro-poor programs.

The remainder of this paper is organized as follows. Section I reviews the development of the CGVO program, the benefits of being a CGVO, and the recruitment and assignment processes. Section II discusses the details of our data collection efforts, which include a case study, a large cross-sectional village governance survey, and a longitudinal village socioeconomic condition survey matched with our retrospective CGVO survey. This section also discusses two national pro-poor policies used for subsequent analysis. In Section III, we summarize our qualitative and descriptive findings from the case study and the cross-sectional survey. Section IV estimates the causal effects of the CGVO program on the targeting and implementation of pro-poor policies and provides a variety of robustness checks. Section V discusses the underlying mechanisms of the results found in the previous section. Section VI concludes the paper.

I. Background

A. *Development of the CGVO Program*

The origin of the CGVO program in China can be traced back to the Chuying Project launched in 1995. Thirteen local university graduates, selected from over 200 applicants, were hired as assistants to the village heads in 13 villages in Jiangsu province. Later in 1998 and 1999, several other cities, such as Yancheng, Anding, Linggao, and Dongfang, also launched similar programs. In 2000, Ningbo in Zhejiang province initiated a larger program called One Village One College Graduate and hired more than 500 local college graduates as village officials. The 1995–2000 period is usually considered as the pilot stage of the CGVO program, as these early explorations were mostly made by the county- or city-level governments in an informal and localized fashion.

Table 1—Number of CGVOs in China

Year	1999	2001	2003	2007	2011
Number	2,200	14,000	21,000	58,000	210,000
Share (percent)	0.32	2.03	3.04	8.41	30.43

Note: The share is calculated using 690,000 villages.

Source: Lv (2008) and CGVO Development Report (2013)

In March 2000, Tianhe District in Guangzhou, Guangdong province started to hire college graduates to work as village officials. A noteworthy feature of this recruitment was that the positions were open to all college graduates in China. The recruitment aroused an enthusiastic response: more than 3,000 college graduates from different provinces traveled to Guangzhou to apply for these positions. The popularity of the program encouraged more cities and counties to launch similar CGVO programs, and the scale of hiring gradually increased. For example, Xingtai in Hebei province hired roughly 1,000 CGVOs in 2004 and assigned at least 1 CGVO to each of its 5,200 villages in the following years.

After observing the development of local CGVO programs for a few years, the central government decided to promote the program nationally. In June 2005, the General Office of the Central Party Committee of China and the General Office of the Council of China jointly issued Guidelines on Encouraging College Graduates to Work at the Grassroots Level, which officially stated that the government would hire outstanding graduates to work in the rural areas. Six provinces, namely Beijing, Sichuan, Jiangxi, Fujian, Qinghai, and Liaoning, immediately adopted this policy and started to recruit graduates in 2006. Other provinces joined the program later in 2007 or 2008. The central government's long-term plan is to assign CGVOs to all the villages in China, with the expectation that the CGVO program can achieve three goals: to help rural development and alleviate poverty, to reduce unemployment among college graduates, and to form a pool of high-quality candidates, who are both well educated and familiar with rural affairs, from which the government can select long-term state employees.

Table 1 shows the evolvement of the CGVO program since 1999. CGVOs numbered around 14,000 in 2001, which means only about 2 percent of villages had officials with college degrees. By the end of 2011, this number had grown by 15 times to over 210,000.

B. *Benefits of Being a CGVO*

Due to enormous socioeconomic disparities between rural and urban areas in China, living and working in rural villages is unappealing to many young college graduates, especially those from large cities. To compensate for the lower quality of life and attract higher-quality applicants, the central government provides an attractive package of benefits: CGVOs are guaranteed to receive salary, pension, medical insurance, and other standard compensation directly from higher levels of government during their term in office (typically three years); their contracts

are renewable with all benefits attached as long as their performances meet some minimum requirements; governmental agencies will assist CGVOs in finding jobs if they choose to leave the villages after their term; CGVOs are given priority in working and earning promotions in the government system, holding other factors equal; those taking the National Civil Service Exam after their term receive reduced admission requirements, holding other conditions equal; those attending graduate school after their term have bonus points added to their graduate entrance examination scores;[1] those starting their own businesses after their term receive training programs, small loans, information consulting, tax and fees reductions, etc.

Different levels of government share the costs of this program. The central government provides basic compensations for CGVOs, then the provincial and lower levels of government offer top-up benefits. More affluent regions usually offer higher compensation. For example, Beijing provides CGVOs with a monthly wage of 2,000 yuan ($317) in the first year, 2,500 yuan ($396) in the second year, and 3,000 yuan ($475) in the third year.[2] After serving as village officials for two years, CGVOs are eligible to obtain a Beijing Registered Residence (Hukou).[3] In Shanghai, a base wage of 2,000 yuan ($317) per month is provided to the CGVOs; at the end of each year, a lump-sum compensation of 21,760 yuan ($3,448) is given to those with satisfactory evaluations. In Chongqing, CGVOs have the same wages and benefits packages as entry-level civil servants. In Jiangsu and Shanxi provinces, their wages match those of other public institutions. In Hubei province, a CGVO receives a compensation of 15,000 yuan ($2,377) per year and a lump-sum reallocation compensation of 2,000 yuan ($317). Wages are lower in less developed regions. Sichuan offers 900 yuan ($143), 1,100 yuan ($174), and 1,500 yuan ($238) per month to three-year college graduates, four-year college graduates, and master's degree holders, respectively. Guizhou province provides CGVOs with a monthly wage of 600 yuan ($95). Henan provides three-year college graduates, four-year college graduates, and master's degree holders with monthly wages of 500 yuan ($79), 600 yuan ($95), and 800 yuan ($127), respectively.

Each year, township and county governments evaluate the performance of their CGVOs. A CGVO can be disqualified, allowing the government to terminate his/her appointment, for several reasons. Crimes and other illegal acts are punished by immediate dismissal; gambling, fighting, superstitious activities, and acts of indecency or noncompliance with the work-leave system (absence from work for more than 10 consecutive days or more than 20 accumulated days in a year) can also result in dismissal upon evaluation.[4] The evaluation results not only affect a CGVO's employment status but are also linked to his/her future career development. In many

[1] They usually receive 10 bonus points, while the full score is usually 350.

[2] We use the exchange rate in 2012 (1:6.31) to convert Chinese yuan to US dollars.

[3] The Hukou (Household Registration) System in China not only distinguishes between residents of rural and urban areas but also distinguishes between residents of different places. Residence registration status is typically associated with a variety of benefits, such as education, housing, and medical care. Beijing and other major metropolitan cities impose very strict restrictions on Hukou registration. On the black market, a Beijing Hukou can fetch about 500,000 yuan (http://news.qq.com/newspedia/101.htm).

[4] On September 19, 2007, a CGVO in Fengyang county became the first CGVO to be dismissed for absence from work for more than 20 days in a year.

cities, CGVO evaluation results are used to determine their level of priority when applying for long-term state employee positions.

On the supply side, China's significant expansion of higher education since the 1990s has made it increasingly difficult for fresh graduates to find jobs in major cities. For example, over 1.5 million college graduates were unemployed in 2008 (CASS 2008). As a result, serving as CGVOs has become an appealing option for many fresh graduates, and admission to the CGVO program has been very competitive. For example, Beijing received more than 19,000 applications for 3,000 positions in 2007; and roughly 1,800 of these applicants held a master's degree. Shanxi province sought to hire 9,030 village officials in 2009 and received more than 181,300 applications, with an admission rate of under 5 percent.

C. *Recruitment and Assignment of CGVOs*

The CGVO recruitment process typically involves multiple rounds. After the government has decided how many graduates to hire, every applicant takes a comprehensive examination similar to the Administrative Aptitude Test and Essay Writing Test used in the National Civil Service Exam. Higher-scoring applicants enter the second round and are interviewed. The government typically selects twice as many candidates for the second round as it will eventually hire. Then the recruiting team interviews every candidate and grades their performance based on a rich set of characteristics, such as communication skills, political ideology, ethics, mental preparedness for working and living in the rural villages, familiarity with rural development, and future career plans. A candidate's total score is the sum of the written exam score and the interview score with the interview weighted at 20 percent to 40 percent. Higher-scoring applicants are asked to attend a physical examination. Once these are passed, the government holds CGVO training sessions to familiarize them with rural affairs before assigning them to the villages.

CGVOs are assigned by higher (county or city) levels of government. Local governments use a range of rules to match CGVOs to villages, but the primary factor is a CGVO's hometown. Most governments prefer assigning CGVOs to villages closer to their hometowns where they are more familiar with local conditions. Given the many dialects in China, matching by hometown significantly facilitates communication. However, to ensure their independence from existing village interest groups, CGVOs cannot be assigned to their own hometowns. Some local governments choose to assign CGVOs to larger and richer villages to boost economic development, while others assign them to poorer villages to help alleviate poverty.

Since the assignment process is not entirely transparent, we explore the potential determinants of CGVO assignments in the Appendix.[5] We examine whether CGVOs' assignments depend on predetermined village characteristics (such as size and income levels before the CGVO program) or time-variant shocks (such as change in income prior to the introduction of the CGVO program) to the villages. However, after carefully analyzing these relationships, we find no evidence that

[5] Details on the assignment tests are discussed in online Appendix A, and the regression results are reported in online Appendix Tables A1 and A2. More details about the dataset are discussed in Section IIC.

CGVOs' assignments are correlated with any of the observed factors. Instead, the location and timing of CGVOs' assignments tend to be idiosyncratic.

II. Qualitative and Quantitative Materials

We collected qualitative and quantitative materials from three different sources. In Section A, we introduce a case study that we conducted in Yuncheng, Shanxi. In Section B, we introduce a cross-sectional survey in 2015 that covers 1,489 nationally representative villages. In Section C, we discuss the main dataset for identification, which combines a twelve-year panel survey covering 255 nationally representative villages and a retrospective CGVO survey on these 255 villages that we conducted in 2012.

A. *Case Study in Yuncheng*

Yuncheng, a city in Shanxi province, has a population of 5.1 million; 4.5 million of which work in agriculture. The CGVO program started in Yuncheng in 2006, and roughly 1,000 villages (out of 3,000) had CGVOs in 2015. We gathered three sets of materials from Yuncheng: in-depth interviews with 56 CGVOs and 20 local village officials, a rich collection of local CGVOs' administrative records, and an online follow-up survey answered by 513 CGVOs in the city.

Field Interviews.—From July to August in 2015, we conducted in-depth interviews with local officials and CGVOs in Yuncheng. We first interviewed the city government's chief official in charge of the CGVOs' affairs and learned from him that promoting government policy and poverty reduction were the two major tasks assigned to CGVOs. We then visited four counties in Yuncheng. In each county, we first interviewed the local official in charge of the CGVOs' affairs and then CGVOs and sometimes local village leaders. In total, we conducted in-depth interviews with 56 CGVOs and 20 village leaders.

Administrative Documents.—In addition to field interviews, we obtained access to local administrative records of CGVOs' affairs, which include detailed information on performance evaluations.

The first type of document we collected was the CGVO Self-Evaluation Form. The form was used by CGVOs to report their most significant contributions to the villages in each year and was referenced by higher-level officials for year-end evaluations. The reports were supplemented with specific examples and details on the various tasks that CGVOs were typically assigned.

The second type of document we examined was the Village Condition Notebook. The notebook was provided to CGVOs by the county government and was used to record the needs and conditions of the village households. In Yuncheng, CGVOs were required to visit all of the households in the village he/she worked in, although this was not strictly enforced. After all of the visits, the notebook was returned to the county government. This policy was intended to help CGVOs gain familiarity with and intervene in village affairs while also collecting first-hand village information for the county government.

Online CGVO Survey.—Finally, to understand whether our findings from the field interviews and administrative documents are consistent across the city, we designed a short online survey and invited all of the CGVOs in Yuncheng to participate in December 2015. Five hundred and thirteen of the roughly 1,000 CGVOs currently working in Yuncheng completed the survey.

B. *Cross-Sectional Village Governance Survey*

In 2015, the Policy Research Center of the Ministry of Civil Affairs of China launched a large cross-sectional survey on rural governance and public good provision in China. In collaboration with the survey team at the Policy Research Center, we designed a set of questions related to CGVOs. The sample of this survey consists of 1,489 villages from 28 provinces, municipalities, and autonomous territories, which were randomly chosen using a multistage stratified sampling method with probability proportional to population size. The survey includes three sub-surveys: a village survey, a poor-household survey, and a villager survey.

In the village survey, the village party secretary (VPS) was asked for general information about the village, including demographic information, agricultural production, economic development, public good provision, village governance and elections, etc. If the village had a CGVO assigned and available at the time of the survey, he/she was also asked to fill out a short questionnaire about his/her basic information, experience as a CGVO, and self-reported contribution to the village. In total, 185 CGVOs were surveyed.

A poor-household survey was conducted in 472 villages randomly chosen from the sample. The poor households in each village were randomly chosen from the pool of applicants who had ever applied for the poor households subsidy provided by the government. The number of poor households surveyed in each village ranged from 1 to 13 depending on the village size, and the total number of poor households surveyed was 3,079. In the poor-household survey, in addition to general socioeconomic information, the respondents were asked to evaluate various social assistance programs and provide detailed records on whether they had applied for and received these benefits. At the end of the questionnaire, we asked the respondents to evaluate the performance of the CGVOs in several dimensions.

In addition to the poor-household survey, a random sample of 2,808 villagers were also selected to fill out a villager survey. The villager survey collected detailed information on the respondent's family conditions, interactions with CGVOs, and evaluation of the CGVOs' contributions.

The combination of the three sub-surveys provides an informative description of the CGVO program and CGVOs' roles in village governance.

C. *NFS Panel Data and Retrospective CGVO Survey*

The main dataset for identification combines the National Fixed-Point Survey (NFS) from 2000 to 2011 with our retrospective CGVO survey conducted in 2012. The NFS is a longitudinal survey conducted by the Research Center for Rural Economy (RCRE) of the Ministry of Agriculture of China. It was launched in 1986

and covers about 24,000 households in 350 villages across 31 provinces, municipalities, and autonomous territories in China. The survey used a multistage cluster population probability sampling method, and the sampling process included three strata. The first stratum was based on geographic topology, dividing a province into three types of terrain: plain, hilly, and mountainous. The second stratum was based on the county characteristics. Counties were divided into three groups by per capita income: low, middle, and high. Representative counties were chosen according to their per capita income. The last stratum was based on village characteristics. One representative village from each county was chosen in the sample with a few dozen households randomly sampled from each village. The NFS sample covers 13.5 percent of the roughly 2,600 counties in China. The number of households surveyed in each village ranged from 50 to more than 100, depending on the size of the village. The NFS records a detailed set of household and village data for a relatively long period.

By agreement, we obtained access to the NFS village-level data for 255 villages in 19 provinces from 2000 to 2011. These provinces are Anhui, Fujian, Gansu, Guangdong, Guizhou, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Shandong, Shaanxi, Shanxi, Sichuan, and Zhejiang. The NFS dataset includes detailed information on village income, population, employment, household composition, enterprise information, local government, land, agricultural production, village business, subsidies, and public good provision.[6]

In 2012, with the support of officials from the Organization Department of the Central Committee of the Communist Party of China (which is responsible for the administration of all state employees in China, including CGVOs), we conducted a retrospective survey on CGVOs in the 255 villages covered by our NFS sample. The questionnaire was sent by our partner officials to the Organization Department branches at the county level for every county with a village included in the NFS sample. The county-level officials were required to fill out the survey for the corresponding villages according to the local CGVOs' administrative files. As agreed with our partner officials, we asked in the short questionnaire whether a village has a CGVO, when the first CGVO was appointed, whether a CGVO had ever been sacked, and how many CGVOs had ever worked in the village. If available, CGVOs' characteristics were also collected.[7]

Figure 1 illustrates the proportion of villages with CGVOs in our sample. This figure started to increase dramatically in 2007, a year after the central government's nationwide promotion of the CGVO program. Between 2000 and 2006, only about 1 percent of the villages had CGVOs, but this share had risen to 30 percent by 2010. The trends are very similar to the national statistics reported in Table 1, suggesting that the NFS sample is indeed representative, and our retrospective survey is accurate.

[6] Several previous studies have used part of the NFS data, such as Benjamin, Brandt, and Giles (2005); Giles and Yoo (2007); Shen and Yao (2008); Padro i Miquel, Qian, and Yao (2012); Martinez-Bravo et al. (2011); and Martinez-Bravo et al. (2014). More details about the data can be found in those papers.

[7] Since many local administrative files did not record detailed information on CGVO characteristics, more than 50 percent of the values are missing for these questions. We will therefore omit these variables from our analysis.

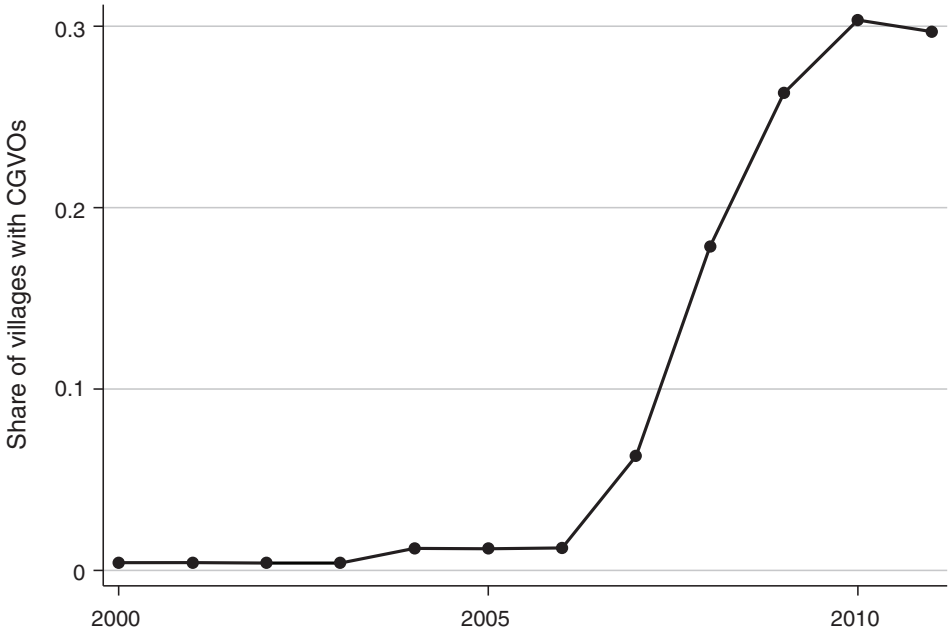

Figure 1. Share of Villages with CGVOs

D. *Key Variables and Summary Statistics*

When analyzing the NFS dataset, we focus on two national pro-poor policies: the Subsidizing Poor Households program and the Renovating Dilapidated Rural Houses program.

Subsidizing Poor Households Program.—The Chinese government subsidizes households living in poverty, and a household is eligible for subsidy if its per capita net income falls below the poverty line.[8] A subsidized poor household usually receives between 500 and 5,000 yuan (about $80–800) per capita annually from the government depending on its specific conditions and the local Consumer Price Index (CPI).

Many poor households are not subsidized because they are not aware of the relevant social assistance programs or are unable to apply for them. A valid application requires not only filling out an application form but also attaching a proof of low income certified by the village officials, a proof that the sons and daughters are unable to support the parents, a household registration book, a proof of diseases or disabilities if relevant, and sometimes a family photo. Some poor households, especially those that are illiterate, find it difficult to gather all of the required evidence.

Aside from regular subsidies from the national Subsidizing Poor Households policy, poor households can also receive subsidies from other poverty subsidy programs, including the Five Guarantees (*wubaohu*) program and the Special Government

[8] The poverty line in China has changed over time. For example, in 1990, the poverty line was 300 yuan ($47.54) per month, and it was raised to 530 yuan ($84.00) per capita in 1995. In 2000, the poverty line was set at 625 yuan ($99) and was further raised to 683 yuan ($108) in 2005. Based on local economic conditions, local governments can also set their own subsidy standards.

Allowance and Care (*youfuduixiang*) program. The Five Guarantees program includes five state guarantees on adequate food, clothing, medical care, housing, and funeral expenses for eligible residents. The elderly, disabled, and children under 16 in rural areas without adequate support from family can receive financial aid from the government under these five categories. Recipients under age 16 receive allowances and other types of assistance to complete their nine-year compulsory education. The Special Government Allowance and Care program is provided to eligible military-related residents, including discharged military personnel, demobilized personnel, surviving family members of military personnel killed on duty or by disease, and family members of military personnel on active duty. Recipients of the Special Government Allowance and Care program are provided with pensions and preferential treatment by the central government.

The NFS data contains information on the number of residents receiving subsidies from all three pro-poor programs in each village. We summed them and used the total subsidized population (normalized by village population) as an outcome measure.[9]

Renovating Dilapidated Rural Houses Policy.—Another centrally mandated policy aimed at helping poor households in China is the Renovating Dilapidated Rural Houses policy. Dilapidated houses are defined as houses with damaged main structures that are likely to collapse, many of which remain inhabited, especially by the poor. These houses are particularly vulnerable to natural disasters, such as earthquakes, floods, and typhoons.

In 2008, the central government launched the Renovating Dilapidated Rural Houses program, which provides poor households with subsidies to renovate their dilapidated houses. The subsidy is provided by the central and provincial governments. The central government typically provides a fixed amount (for example, 5,000 yuan ($800) per household in 2009), to which the provincial government adds at least an equivalent amount.

The dilapidated houses are classified based on their risk of collapse. Poorer households who live in high-risk houses are given priority for the renovation subsidy. The application process for the housing renovation subsidy is complicated and involves multiple rounds of screenings and evaluations. Applicants first fill out a long application form and provide their household registration book, personal ID, and a proof of low income obtained from the Department of Civil Affairs. The application is then screened by neighborhood villagers, village officials, township officials and county officials. Different levels of officials evaluate whether the house is indeed dilapidated, whether the applicant can afford renovation, and whether the applicant is likely to spend the money solely on renovation and not for other purposes.

In the NFS data, we have information on two types of houses: houses built with reinforced concrete and steel and houses built with bricks, stones, and wood. The latter are less stable and more dangerous than the former and house roughly

[9]The findings remain the same if we instead use the number of subsidized residents under the Subsidizing Poor Households policy. In fact, since the variable indicating the subsidized population under the Subsidizing Poor Households policy has fewer missing values than the variable indicating the subsidized population from all three programs, the results are slightly stronger in terms of statistical significance and robustness if we use the former as the main outcome variable.

Table 2—Summary Statistics of NFS Villages

Variable	Observations	Mean	Standard deviation
Village population	2,773	1,756	1,324
Rural per capita net income (yuan)	2,661	3,946	2,718
Subsidy rate (per 1,000)	2,102	30	43
Poor housing (per 100 HHs)	2,417	57	31
Registered poor households (per 100 HHs)	2,654	7	10
Disability rate (per 1,000)	1,826	11	11
Number of village officials	2,801	6	3
Village officials with "high school and above" education (percent)	2,801	42	27
Village officials with middle school education (percent)	2,801	50	27
Village officials with "primary school and below" education (percent)	2,801	8	15
Agricultural households (per 100 households)	2,621	74	24
Per capita business revenue (yuan)	2,747	178	1,233
Village government fiscal revenue per capita (yuan)	1,974	504	2,798
Village government fiscal expenditure per capita (yuan)	1,584	319	1,759
Government collective revenue (yuan)	2,162	792	6,735
Trained laborers (per 100)	2,607	19	22
HHs with tap water access (per 100 HHs)	1,408	80	33
HHs with computers (per 100 HHs)	1,471	7	13
HHs with rural cooperative medical insurance (100 HHs)	1,320	83	28
School enrollment rate for children aged 7–13 (percent)	2,369	98	7

Note: These statistics are based on our analysis of 255 villages from the National Fixed-Point Survey (NFS) from 2000–2011 in 19 provinces.

57 percent of households in the sample. Although the exact number of dilapidated houses is not reported in the NFS data, the dilapidated houses are a subset of the houses built with bricks, stones, and wood. So we investigate whether the proportion of houses built with bricks, stones, and wood decreased after the arrival of the CGVOs. Hereafter, we refer to the share of houses built with bricks, stones, and wood as "the share of poor-quality housing."

Summary Statistics.—In Table 2, we summarize the descriptive statistics of relevant variables to be used in subsequent analysis. On average, a village has 1,756 residents with a per capita net income of 3,946 yuan ($625). The subsidy rate is about 30 per 1,000 rural residents. More than half of the households (57 percent) live in poor-quality houses built with bricks, stones, and wood. Seven out of 100 households are registered as poor households, and the disability rate is about 1 percent.

The average number of village officials in a village government council is 6, roughly 42 percent of whom were educated to a level of "high school or above." The average per capita village government fiscal revenue and spending are 504 yuan ($80) and 319 yuan ($51), respectively.

We also collected weather data (rainfall and temperature) from China's national weather stations because weather conditions are important determinants of factors, such as agriculture production and rural labor supply and income.

III. Qualitative and Associational Evidence on the Impacts of CGVOs

A CGVO's work can potentially involve almost every aspect of local governance. As administrative officers, they handle regular administrative affairs, such

as promoting national policies, documenting and classifying materials, collecting village statistics, and writing reports. As members of the village committees or of the local Communist Party branch, they can also be involved in the village policy-making process.[10] Some CGVOs also deliver training programs to villagers, such as teaching them to use computers and adopt new agricultural technologies. They may also help collect and distribute information on products, markets, and new policies. CGVOs may serve as conflict mediators as well.

Given the potentially multifaceted roles that CGVOs can play, it is important to develop an overall understanding of which potential roles are most relevant and prevalent in reality. In this section, we first discuss the qualitative findings on CGVOs' responsibilities based on our Yuncheng case study and then corroborate these findings by analyzing the cross-sectional village governance survey. These qualitative and anecdotal findings will be used to guide our DID analysis in Section IV.

A. *Yuncheng Case Study*

In the Yuncheng case study, we interviewed CGVOs, obtained access to administrative files, and conducted a short online CGVO survey. The information we collected from these three different sources seemed highly consistent, forming a detailed and coherent description of CGVOs' responsibilities in rural governance.

Field Interviews.—When we asked CGVOs about their main responsibilities and obligations, "improving the targeting and implementation of national programs to help alleviate poverty" was the most frequent answer. More specifically, three channels were repeatedly mentioned: strictly enforcing the procedures of national policies to make policy implementation more transparent and less exposed to elite influence; providing information to villagers, especially by answering their questions regarding the rules and application processes of various social assistance programs, and assisting them throughout the application process; and adopting e-governance systems, which can be used to formally register poor households, potentially entitling them to future social assistance programs.

Administrative Files.—In the CGVO Self-Evaluation Forms, which required CGVOs to list their most important contributions in the past year and provide specific examples, "poverty reduction" was listed as a major achievement by almost every CGVO. Specifically, many CGVOs mentioned helping to promote and implement the Subsidizing Poor Households program and the Renovating Dilapidated Rural Houses program, which significantly improved the welfare of the poor villagers. In online Appendix B, we provide several sample copies of these CGVO Self-Evaluation Forms with English translations.

[10] Although CGVOs typically serve as assistants to the village chair or village party secretary, many have become direct decision makers in the villages in recent years. By the end of 2012, more than 67,000 CGVOs had become members of village committees and Communist Party branches. Over 4,200 of those 67,000 CGVOs became the secretaries of party branches, and over 1,500 were elected as the chairpersons of village committees (CGVO Development Report 2013).

In the Village Condition Notebooks, CGVOs documented the main contents of their conversations with village households during their required household visits, with the contents verified by the signatures of the involved villagers. After reading these notebooks, we found a common phenomenon: many poor households were unfamiliar with their eligibility for different types of social assistance programs and so were unsure whether to apply or which program to apply for. As a result, many poor households were not properly subsidized despite being entitled to certain programs. In the documented conversations, poor households often explained their difficulties to CGVOs and consulted with them over whether to apply for certain subsidies. CGVOs were able to help them by finding suitable programs, providing guidance on the application process, or relaying this information to higher-level officials in charge of these programs. Sample copies of these conversation records are provided in online Appendix C with English translations.

Online Survey.—In the short online survey in Yuncheng, we asked a series of questions related to the responsibilities and performances of CGVOs. We first asked them: "Do you think your presence in the village has made the procedure of policy implementation and decision making more formal and transparent?" Almost all CGVOs (510 out of 513) responded that they believe there was a positive impact. We then asked them: "What are your main responsibilities in the village?" in a multiple-choice question with 11 options. The five most frequently mentioned answers were: helping villagers apply for subsidies to renovate their dilapidated houses (37 percent); promoting various government programs (33 percent); providing suggestions to villagers in need (29 percent); helping assign poverty subsidies to villagers in need (26 percent); and work related to computers and the internet (26 percent), respectively.

We then asked: "At which stages do you contribute to the implementation of pro-poor programs?" Roughly 40 percent mentioned conducting home visits to evaluate the needs of relevant households and giving them advice; about 30 percent mentioned helping poor households prepare their application materials; and roughly another 30 percent mentioned helping strictly enforce the group decision-making process of choosing beneficiaries as required by the Ministry of Civil Affairs.

Finally, to better understand the incentives of CGVOs, we asked them: "What are the criteria you think your performance evaluation is based on?" The top three answers were: "effectiveness of policy promotion" (43 percent); "effectiveness of conflict prevention between villagers" (42 percent); and "effectiveness of poverty reduction" (36 percent), respectively.[11]

B. *Evidence from the Village Governance Cross-Sectional Survey*

In the 2015 Village Governance Cross-Sectional Survey covering 1,489 nationally representative villages, we designed a series of questions related to CGVOs. We surveyed three different groups of stakeholders: poor households, random villagers,

[11] A large share of conflicts between villagers is caused by dissatisfaction with the allocation of pro-poor subsidies.

Table 3—How CGVOs Help Rural Households

	Poor HHs		Random villagers		CGVOs	
	Y (1)	N (2)	Y (3)	N (4)	Y (5)	N (6)
Panel A. General knowledge (percent)						
Have you heard of CGVOs?	19.6	80.4	40.5	59.5	/	/
Any CGVOs in the village?	24.2	75.8	4.4	95.6	/	/
Assistance from CGVOs?	34.9	65.1	38.0	62.0	/	/
Observations	3,079		2,808		/	
Panel B. Assistance from CGVOs on the following aspects (percent)						
Agricultural production advising	36.5	63.5	56.3	43.8	23.3	76.7
Rural-urban migration advising	15.4	84.6	18.8	81.3	23.9	76.1
Policy consulting	**57.7**	42.3	**56.3**	43.8	**67.8**	32.2
Application for subsidies	**36.5**	63.5	**56.3**	43.8	**49.4**	50.6
Filling in forms or writing letters	**32.7**	67.3	**50.0**	50.0	**62.8**	37.2
Kids' education consulting	25.0	75.0	25.0	75.0	33.9	66.1
IT and computer consulting	13.5	86.5	12.5	87.5	38.3	61.7
Marketing for agricultural products	9.6	90.4	31.3	68.8	17.8	82.2
Investment consulting	7.7	92.3	31.3	68.8	5.0	95.0
Observations	146		50		185	

Notes: Data were collected by the Policy Research Center in the Ministry of Civil Affairs in China in 2015. The research team first selected 1,489 villages in 28 provinces, municipalities, and autonomous territories in China in 2015 to participate in the village survey. These villages were chosen using a multistage stratified sampling method with probability proportional to population size. Then the random sample of poor households (3,079) and villagers (2,808) were chosen from a random sample of the villages (472) to participate in the poor household survey and villager survey. In the sampled villages, if a CGVO was available at the time of the survey, he/she was invited to fill out a short survey on their duties and experiences in the villages. In panel A, we asked poor households and villagers whether they had heard of the CGVO program. If the answer was yes, we asked them whether there were any CGVOs in the village. If the answer was yes, again, we asked them whether they had received any assistance from the CGVOs. Panel B summarizes different types of assistance provided by CGVOs.

and CGVOs themselves, and asked the same set of questions related to their awareness, attitudes, and evaluations of CGVOs.

The results are summarized in Table 3. In panel A, we asked the poor households and random villagers whether they had heard of the CGVO program. If they had, we asked them whether there were any CGVOs currently working in their villages. If they said yes, we further asked them whether they had received any assistance from these CGVOs.

Their answers reveal several interesting patterns. First, a larger share of random villagers had heard of the CGVO program than that of poor households. This may reflect the fact that the poor households are generally less informed about national policies and live in a relatively disadvantaged position. Second, of those who had heard of the CGVO program, a larger share (24 percent) of poor households reported that there were CGVOs in their villages. In stark contrast, only 4 percent of the villagers who had heard of the CGVO policy said that there were CGVOs in their villages. Since roughly one-third of the villages had CGVOs in our village survey, the results indicate that many villagers were unaware of the presence of CGVOs in their villages. This striking difference in awareness of CGVOs' presence between poor households and random villagers implies that CGVOs work more closely with poor households than with the general population. Third, more than one-third of those

who reported CGVOs in their villages (both poor and self-sufficient households) had received assistance from CGVOs.

In panel B, we further asked self-reported recipients of CGVOs' assistance which specific aspects the CGVOs had assisted them in: agricultural technology and production advising, rural-urban migration advising, policy consulting, applying for subsidies, filling in forms or writing letters, child education consulting, IT and computer consulting, product marketing, and investment consulting and application for loans. Among these nine aspects, three were most relevant to pro-poor policy promotion: policy consulting, applying for subsidies, and filling in forms or writing letters. In columns 1 and 2, we find that 58 percent (the largest proportion) of the poor households reported receiving policy-consulting services from CGVOs. Roughly 37 percent (the second largest) reported receiving help from CGVOs in applying for subsidies. About 33 percent (the fourth largest) of the assisted poor households reported receiving help in filling in forms or writing letters.

Of the sample of randomly selected villagers who received assistance from CGVOs, more than 50 percent reported receiving help with policy consulting, subsidy applications, and filling in forms or writing letters (columns 3 and 4), which are highly consistent with responses from poor households. Interestingly, while less than 10 percent of poor households reported receiving help from CGVOs on "marketing for agricultural products" and "investment consulting," more than 30 percent of random villagers reported having received help in these aspects, consistent with the fact that they are on average richer and more entrepreneurial than their poorer counterparts.

We asked CGVOs the same set of questions. CGVOs also told us that most of their work involved policy consulting and subsidy applications (columns 5 and 6). These statistics are remarkably consistent across the three sets of respondents.

Another interesting observation is that, despite a relatively large share of surveyed villagers (37 percent of the assisted poor households and 56 percent of the assisted random villagers) reporting having received advice on agricultural production, CGVOs generally did not recognize their own contribution toward this area. This inconsistency may reflect that CGVOs doubted their own abilities to help farmers with agricultural production, possibly due to their lack of relevant training in university.

To summarize, the field interviews, administrative files, internet survey, and national cross-sectional survey all consistently suggest that CGVOs mainly work on policy promotion and poverty alleviation, and their major contribution is helping poor households benefit from existing social assistance programs by informing and registering them and reducing elite capture by strictly enforcing the administrative procedures of subsidy assignment.

IV. Impacts of the CGVO Program

We estimate the impacts of the CGVO program on poverty alleviation by applying a DID approach to our NFS-CGVO panel dataset. In Sections A and B, we discuss our identification strategy and summarize the main findings. In Section C, we examine the parallel pretreatment trends assumption; in Section D, we check the robustness of the main findings.

A. *Econometric Model*

We estimate the impacts of the CGVO program using a generalized DID (two-way fixed effects) approach:

$$y_{it} = \alpha \times CGVO_{it} + X'_{it} \times \beta + \rho_t + \mu_i + \varepsilon_{it}, \tag{1}$$

where y_{it} is an outcome of interest for village i in year t, $CGVO_{it}$ is a dummy indicator, which equals 1 if village i in year t has a CGVO, and 0 otherwise. X_{it} is a set of time-varying control variables, including precipitation and temperature in each village-year pair. ρ_t is a time effect common to all villages in period t, μ_i is a time-invariant effect unique to village i, and ε_{it} is a village time-varying error distributed independently of μ_i and ρ_t.

We focus on 4 main outcome variables: the number of formally registered poor households in a village (per 100 households); the number of formally registered residents with disabilities in a village (per 1,000 residents); the number of subsidized residents in a village (per 1,000 residents), which measures the effectiveness of the Subsidizing Poor Households policy; and the number of poor-quality rural houses (per 100 households), which measures the effectiveness of the Renovating Dilapidated Rural Houses policy. We use the logarithm of the outcomes in the regressions, so the estimated coefficient of α should be interpreted as semi-elasticity.[12]

College students typically graduate every June and assume their duties as CGVOs during the same month or the month after. Using the current year's treatment status may fail to capture the full impacts of CGVOs; thus, we also use one-year lagged values for the CGVO dummy variable as the independent variable.

B. *Main Results*

We first examine the "registration effect," motivated by our qualitative observation that CGVOs can help more rural families register as poor households in the government systems. Registered poor households are those who applied for the government subsidies and whose application materials have been kept by government agencies.[13] Registered poor households receive subsidies from the government once they have passed the required screening. In some cases, they are also automatically targeted for future government pro-poor programs.

The results for registered poor households are reported in columns 1 to 4 of Table 4. Since the timing of CGVO assignment was largely decided at the provincial level, we cluster the standard errors at the provincial level in our preferred specifications. These standard errors are reported below the estimated coefficients. As we only have 19 provinces, we address the issue of small sample bias in the clustered

[12] The estimates using the levels of the outcomes as the dependent variables are qualitatively unchanged.

[13] Note that the number of registered poor households is not necessarily greater than the number of subsidized poor households. In fact, when we interviewed the village officials, we found that some villages subsidized more poor households than the registered number. For instance, richer villages sometimes have their own antipoverty programs that subsidize poor households. It is also common for the village government to divide the subsidies from higher levels of government and then distribute them to all of the poor households regardless of whether they are registered.

Table 4—CGVO and Pro-poor Policies: Registration Effect

	Registered poor households (per 100, log)				People with disabilities (per 1000, log)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CGVO	0.13	0.13			0.09	0.08		
	(0.06)	(0.06)			(0.07)	(0.07)		
	(0.07)	(0.07)			(0.07)	(0.07)		
	(0.08)	(0.08)			(0.08)	(0.08)		
L.CGVO			0.18	0.18			0.15	0.14
			(0.07)	(0.07)			(0.08)	(0.08)
			(0.08)	(0.08)			(0.08)	(0.08)
			(0.08)	(0.08)			(0.09)	(0.09)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Village fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,654	2,654	2,654	2,654	1,826	1,826	1,826	1,826
R^2	0.65	0.65	0.65	0.65	0.73	0.73	0.73	0.73

Notes: This table estimates the impacts of CGVO on registered poor households and people with disabilities. We probe the robustness of the estimates accuracy by clustering the standard errors at three different levels: provincial, village, and village and province-year level (multiway clustering suggested by Cameron, Gelbach, and Miller 2011). These standard errors are respectively reported in the parentheses below the estimated coefficients. Our preferred specification clusters standard errors at the provincial level. As we only have 19 provinces, we also use wild bootstrapping, a method recommended by Cameron, Gelbach, and Miller (2008) to address the small sample bias in the clustered standard errors. The wild bootstrapped p-values from this method are similar to the ones clustered at the provincial level.

standard errors by calculating p-values derived from wild bootstraps, as recommended by Cameron, Gelbach, and Miller (2008). The wild bootstrapped p-values are similar to the ones clustered at the provincial level. We probe the robustness of the estimate accuracy by presenting another two sets of standard errors: standard errors clustered at the village level and standard errors clustered at the village and province-year level (multiway clustering suggested by Cameron, Gelbach, and Miller 2011).

The regression results in columns 1 to 4 show that both current CGVO and lagged CGVO are positively associated with a higher number of registered poor households.

In columns 5 to 8, we complement this analysis by providing results for another relevant variable: the number of residents with disabilities in a village. Once a villager's disability is registered in the government system, he/she automatically becomes a potential beneficiary for relevant social assistance programs.

We see that the number of residents with disabilities increases in villages with CGVOs, and this effect is larger for the one-year lagged CGVO indicator. Since CGVOs are unlikely to cause more villagers to become disabled, the only reasonable explanation for this pattern is their registration of villagers with existing disabilities.

Having confirmed that CGVOs help register poor households for social assistance programs, we test whether poor households indeed benefit from these programs in Table 5. The outcome variables are the subsidy rate (subsidized population per 1,000) and the proportion of poor-quality housing (per 100 households). In columns 1 to 4, we find that CGVOs have a positive impact on the subsidized population. The estimated coefficients range from 0.19 to 0.21. The magnitude of the estimated coefficient of the lagged CGVO dummy is slightly larger than that of the original CGVO dummy. Columns 5 to 8 show that compared with villages

Table 5—CGVO and Subsidies

	Subsidized population (per 1000, log)				Poor housing (per 100 households, log)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CGVO	0.19	0.19			−0.08	−0.08		
	(0.11)	(0.11)			(0.05)	(0.05)		
	(0.09)	(0.09)			(0.06)	(0.06)		
	(0.11)	(0.10)			(0.07)	(0.07)		
L.CGVO			0.21	0.21			−0.14	−0.13
			(0.10)	(0.10)			(0.06)	(0.06)
			(0.10)	(0.10)			(0.07)	(0.07)
			(0.10)	(0.10)			(0.08)	(0.08)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Village fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,102	2,102	2,102	2,102	2,417	2,417	2,417	2,417
R^2	0.61	0.61	0.61	0.61	0.76	0.76	0.76	0.76

Notes: This table estimates the impacts of CGVO on poverty subsidy and poor housing. We probe the robustness of the estimates accuracy by clustering the standard errors at three different levels: provincial, village, and village and province-year level (multiway clustering suggested by Cameron, Gelbach, and Miller 2011). These standard errors are respectively reported in the parentheses below the estimated coefficients. Our preferred specification clusters standard errors at the provincial level. As we only have 19 provinces, we also use wild bootstrapping, a method recommended by Cameron, Gelbach, and Miller (2008) to address the small sample bias in the clustered standard errors. The wild bootstrapped p-values from this method are similar to the ones clustered at the provincial level.

without CGVOs the number of poor-quality houses in villages with CGVOs significantly decreased a year after the CGVO program was introduced. The estimated reductions range from 8 percent to 14 percent, and the effect of the lagged CGVO dummy is larger. This is reasonable because applying for the renovation subsidy and the actual renovation process usually take longer than applying for the poverty subsidy. We include weather conditions as control variables as they are important determinants of agricultural production. For both outcomes, the estimated impacts are highly robust to the inclusion of these time-varying control variables, suggesting that time-varying factors are not correlated with CGVO assignment, and our difference-in-differences approach is likely to be valid.

C. *Tests for the Parallel Trends Assumption*

Since both village fixed effects and year fixed effects are included in the regressions, equation (1) is essentially a generalized difference-in-differences model. The underlying assumption for an unbiased estimate of α is that the trends in the outcomes for both control and treatment groups prior to the introduction of the CGVO program are parallel. The CGVO program is introduced into villages in a staggered fashion, so we examine the parallel pretreatment trends assumption for all of the outcome variables in Tables 4 and 5 using an event study approach. Following Jacobson et al. (1993), we estimate the following equation:

$$y_{it} = \sum_{k \geq -4,\, k \neq -1}^{k=3} D_{it}^{k} \cdot \delta_k + \mu_i + \rho_t + + \varepsilon_{it}, \tag{2}$$

where y_{it} represents the main outcomes of interests in village i in year t. The dummy variables D_{it}^{k} jointly represent the CGVO assignment event. We define s_i as the year when village i was assigned its first CGVO. We define $D_{it}^{-4} = 1$ if $t - s_i \leq -4$, and 0 otherwise; $D_{it}^{k} = 1$ if $t - s_i = k$, and 0 otherwise, where $k = -3, -2, 0, 1, 2$; and $D_{it}^{3} = 1$ if $t - s_i \geq 3$, and 0 otherwise. μ_i is a village fixed effect, while ρ_t is a year fixed effect.

Note that the dummy for $k = -1$ is omitted in equation (2) so that the posttreatment effects are relative to the period immediately prior to the start of the program. The parameter of interest δ_k estimates the effect of CGVOs' k years following its occurrence. We include leads of the CGVO assignment dummy in the equation, testing whether the treatment affects the outcomes (for up to four years) before CGVOs were assigned to the village. A test of the parallel trends assumption shows that the leads of the treatments have no impact on the outcomes, i.e., $\delta_k = 0$ for all $k \leq -2$.

Table 6 reports the regression results. To help visualize the dynamic effect, Figure 2 displays the point estimates of the 4 outcomes along with their 90 percent confidence intervals. Each dot is an estimated coefficient of the treatment dummy variable corresponding to a different number of years prior to or after the actual treatment. The upper-left panel shows the estimates for the number of registered poor households receiving subsidies, and the upper-right panel shows the estimates for poor-quality housing. The bottom-left and bottom-right panels, respectively, show the estimates for registered poor households and people with disabilities. In all four panels, the estimated coefficients of the leads of treatments, i.e., δ_k for all $k \leq -2$, are statistically indifferent from 0. Thus, we conclude that the pretreatment trends in the outcomes in both groups of villages are similar, and villages without CGVOs can serve as a suitable control group for villages with CGVOs in the treatment period.

D. *Robustness Checks*

We first check the robustness of the results by exploiting the variation in CGVO treatment across villages within the same province:

$$y_{ipt} = \alpha \times CGVO_{ipt} + X'_{ipt} \times \beta + \rho_{pt} + \mu_i + \varepsilon_{ipt}, \tag{3}$$

where y_{ipt} is the outcome of interest in village i, province p, in year t; μ_i is a village fixed effect; ρ_{pt} is a province-by-year fixed effect; and ε_{ipt} is a village-year specific error term. Village fixed effects control for time-invariant characteristics that affect the likelihood that a CGVO will be assigned to the village. Province-year fixed effects account for annual shocks that are common to all villages in the same province.

The province-year fixed effects absorb all of the provincial level variation in both the time-series and cross-sectional dimensions and can thus flexibly control for confounding factors, such as business cycles, differential trends, and policies across provinces, etc. Coefficient α is identified by within-province comparisons of outcomes of interest. That is, the effect of the CGVO program is estimated by comparing the outcomes of two villages in the same province in the same year. The

Table 6—Tests for the Parallel Trends Assumption

	Subsidized population (per 1,000, log)	Poor housing (per 100 households, log)	Registered poor households (per 100, log)	People with disabilities (per 1,000, log)
	(1)	(2)	(3)	(4)
$\geq$ 4 years before	−0.09	−0.05	0.07	−0.10
	(0.12)	(0.07)	(0.09)	(0.09)
3 years before	−0.09	0.04	−0.01	−0.02
	(0.10)	(0.04)	(0.08)	(0.07)
2 years before	−0.07	0.03	−0.03	−0.04
	(0.08)	(0.03)	(0.06)	(0.07)
Year of CGVO assigned	0.09	−0.01	0.08	−0.01
	(0.07)	(0.04)	(0.06)	(0.07)
1 year later	0.19	−0.11	0.24	0.06
	(0.10)	(0.06)	(0.09)	(0.10)
2 years later	0.18	−0.14	0.22	0.10
	(0.11)	(0.07)	(0.09)	(0.12)
$\geq$ 3 years later	0.10	−0.21	0.19	0.17
	(0.16)	(0.10)	(0.10)	(0.13)
Village fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	2,102	2,417	2,654	1,826
R^2	0.62	0.76	0.65	0.73

Notes: We conduct an event study by including leads and lags of the first CGVO assignment dummy in the regressions. The dummy indicating one-year prior treatment status is omitted from the regression. Standard errors are clustered at the provincial level and reported in the parentheses. Alternative clustering methods (such as clustering at village level and village and province-year level) do not affect the results and are not reported.

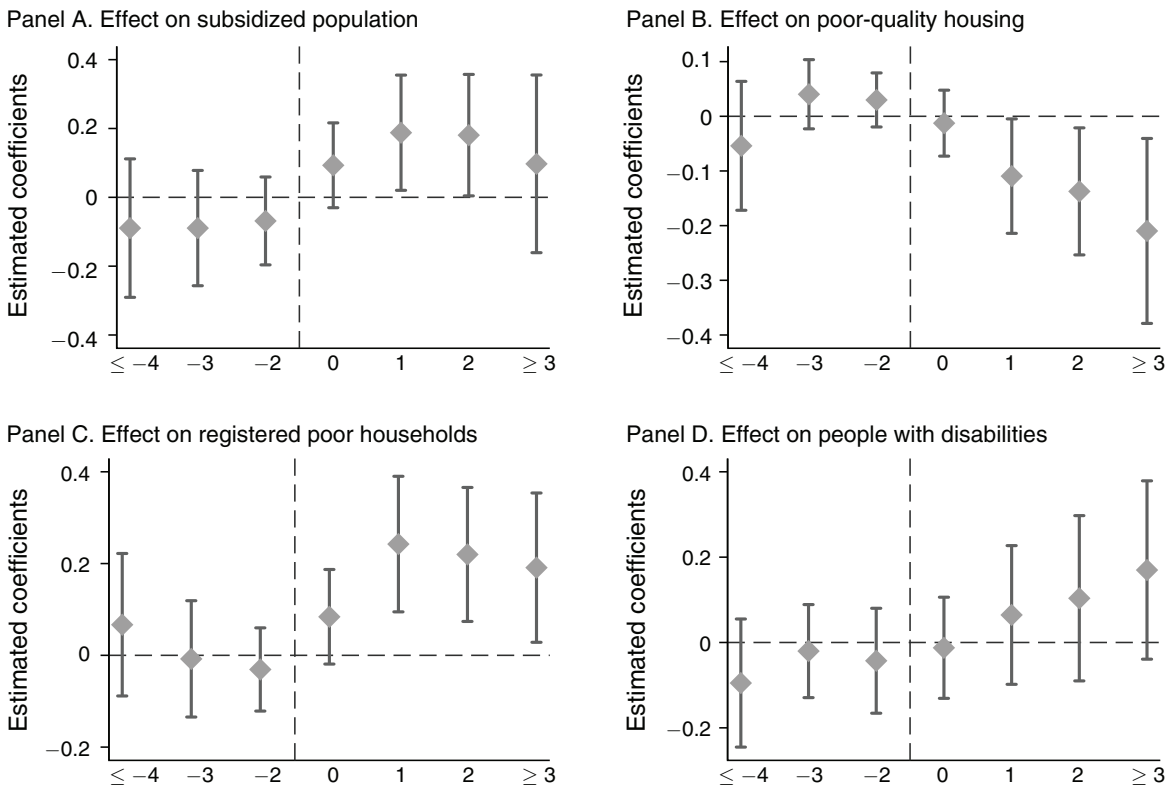

Figure 2. Estimated Effect of Implied CGVO Treatment for Years before and after Actual Treatment

estimated effects are robust and similar to these in Tables 4 and 5 and are reported in online Appendix Tables D1 and D2.

Another concern is that a few villages were in those pilot cities or districts for the CGVO program (as discussed in Section I) and had CGVOs long before the central government started to promote this program. To address the concern that our main results might be driven by these pilot villages, in online Appendix Tables E1 and E2, we drop all of the villages that had first received a CGVO before 2007 and reestimate equation (1). All of the findings remain the same.

We also check the robustness of the results using an alternative treatment indicator. In equation (1), the $CGVO_{it}$ variable indicates whether a village has a CGVO in a given year. If a CGVO left a village during the sample period, the variable became zero. An alternative way to define treatment status is to treat all of the years after the introduction of CGVOs as the treated period regardless of CGVOs' departures. Conceptually, this alternative definition of treatment would make sense if the CGVOs' impacts are permanent. However, in our sample, only a handful of villages witnessed a CGVO departure, and so the results using the alternative treatment indicator remain unchanged. These results are reported in online Appendix Tables F1 and F2.

Finally, as discussed in online Appendix A, neither pre-CGVO levels nor pre-CGVO shocks are correlated with the assignment of CGVOs. It is therefore very unlikely that our results can be confounded by dynamic underlying differences between those villages that receive CGVOs and those that do not.

V. Mechanisms

Our explanation for the main results is that CGVOs can help more poor households benefit from existing social assistance programs by improving their promotion and implementation. In this section, we examine alternative explanations and discuss the underlying mechanisms.

A. *Alternative Explanation: CGVO on Income and the Village Economy*

We explore two alternative explanations: CGVOs may reduce the income level of rural households, resulting in an actual increase in the number of poor households eligible for social assistance programs; and CGVOs may improve village councils' businesses and financial conditions, increasing the availability of internally supported subsidies to the villagers.

To test the first hypothesis, we focus on three income-related outcomes: rural household net income, per capita village business revenue, and the proportion of households who earn their living primarily from agricultural production. The regression results are summarized in panel A of Table 7. We find that CGVOs affect neither rural households' net income nor village business revenue. They also do not help diversify household income sources. These results suggest that the first hypothesis is unlikely to be true.[14]

[14] Note that the finding that CGVOs do not affect per capita income does not contradict the finding that more poor households obtain subsidies. National Bureau of Statistics (NBS) only surveyed 50–100 households in each

Table 7—CGVO and Income-Related Measures

	Net income (pc, log)		Village business revenue (pc, log)		Share of Ag. HHs. (percent)	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Households income-related						
CGVO	0.00		0.04		0.03	
	(0.04)		(0.04)		(0.08)	
L.CGVO		−0.01		0.04		−0.02
		(0.04)		(0.05)		(0.09)
Observations	2,661	2,661	2,621	2,621	2,747	2,747
R^2	0.91	0.91	0.81	0.81	0.76	0.76
	Gov. fiscal revenue (pc, log)		Gov. fiscal expenditure (pc. log)		Gov. collective business revenue (pc, log)	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel B. Village government financial conditions						
CGVO	0.13		0.03		0.09	
	(0.08)		(0.10)		(0.09)	
L.CGVO		0.09		−0.06		0.11
		(0.08)		(0.08)		(0.09)
Observations	1,974	1,974	1,584	1,584	2,162	2,162
R^2	0.70	0.69	0.70	0.70	0.61	0.61

Notes: All regressions include village fixed effects, year fixed effects, and control variables as in Table 5. Standard errors in parentheses are clustered at the provincial level. Alternative clustering methods (such as clustering at village level and village and province-year level) do not affect the results and are not reported.

For the second hypothesis, we test whether CGVOs affect village fiscal revenue and expenditure or village collective business revenue. The results are reported in panel B of Table 7. Again, all of the estimated coefficients are small and indifferent from zero.[15] We conclude that village councils with CGVOs are not becoming richer or spending more to help the poor. It is therefore also unlikely that the increases in subsidized residents and renovated rural houses are internally supported.

B. *CGVO on Village Council Size and Composition*

To better understand the channels through which CGVOs can help improve the promotion and implementation of pro-poor policies, we examine how CGVOs affect rural governance in this section. We estimate the effects of CGVOs on four outcomes: village council size (total number of village officials),[16] the share of village officials with low levels of education (primary school or below), the share of

village to calculate the average village-level income. The likelihood of poor households being surveyed is low given that only seven percent of households are registered as poor. Although some poor households may be surveyed, this marginal change is unlikely to have a substantial impact on the overall income levels in a village.

[15] Note that the subsidies received by poor households from higher levels of government are not part of village fiscal revenue and expenditure.

[16] Village council refers to all of the officials in the village, both those from the village committee and those from the Village Party branch.

Table 8—CGVO and Rural Governance

	Number of village council members (1)	Share of high school council members (percent) (2)	Share of middle school council members (percent) (3)	Share of primary school council members (percent) (4)
CGVO	0.16	4.35	−4.24	−0.11
	(0.16)	(2.22)	(2.32)	(1.08)
Observations	2,801	2,801	2,801	2,801
R^2	0.79	0.67	0.61	0.61

Notes: All regressions include village fixed effects, year fixed effects, and control variables as in Table 5. Standard errors in parentheses are clustered at the provincial level. Alternative clustering methods (such as clustering at village level and village and province-year level) do not affect the results and are not reported.

village officials with medium levels of education (middle school), and the share of village officials with high levels of education (high school and above).

The results are shown in Table 8. First, in column 1, we find that being assigned a CGVO has no significant impact on the total number of village officials. The coefficient is small and precisely estimated, suggesting that a CGVO substitutes an existing official in the village council. Second, columns 2 to 4 show that the introduction of a CGVO increases the proportion of village officials with a high level of education, reduces the proportion of village officials with a medium level of education, and has no impact on the proportion of village officials with a low level of education. In other words, local village officials with a middle-school education are the most likely to be replaced by CGVOs. Interestingly, the least-educated officials are not crowded out by CGVOs, which may indicate that their skill sets are complementary to those of CGVOs.

The results in Table 8 suggest that our main findings should not be interpreted as the mechanical effect of introducing an additional village official into the village council. Instead, holding the village council size constant, the introduction of CGVOs increases the average education level of the governance team. In other words, the CGVO program represents an improvement in bureaucrat quality, rather than quantity, for the rural governance system.

C. *CGVOs on Elite Capture*

Another concern is that CGVOs may collude with local village elites. By helping more poor households register for subsidies, they can create room for elite capture and corruption. Specifically, it is possible that even while more poor households are registered and receive subsidies (increase in the extensive margin) a significant proportion of these subsidies can be appropriated by CGVOs and existing elites, rather than actually being transferred to poor households (decrease in the intensive margin).

This hypothesis is unlikely to hold because it contradicts our qualitative findings in the case study. Empirically, we test this possibility by analyzing data from the Village Governance Cross-Sectional Survey. In the sub-survey answered by poor

households, we have detailed information on various social assistance programs, including the amounts of subsidies that poor households received from the government in 2014. If the collusion story is true, we should expect subsidized households in villages with CGVOs to receive smaller subsidies; if the CGVOs are relatively independent from local elites, we should expect those households to receive larger subsidies.

We match the poor household survey with the village survey and estimate the associations between the total amount subsidized and CGVO treatment using a linear regression model:

$$y_{ijp} = \alpha \cdot CGVO_j + x_i' \cdot \beta + z_j' \cdot \gamma + \mu_p + \epsilon_{ijp}, \tag{4}$$

where y_{ijp} is the total subsidies (log) received in 2014 by poor household i in village j in province p. $CGVO_j$ is a dummy variable that equals one if there was a CGVO working in the village, and zero otherwise. x_i is a vector of household-level control variables, z_j is a vector of village-level control variables, μ_p is province fixed effect, and ϵ_{ijp} is the error term.

The regression results are summarized in Table 9. We find that poor households receive larger subsidies in villages with CGVOs. We use six different specifications to check the robustness of the results. In column 1, we run a simple regression of the subsidized amount on the CGVO dummy with no control variables included. In columns 2 to 5, different sets of control variables are added into the regressions. In column 6, all of the control variables are included. We have four sets of control variables. The basic characteristics of a household include the number of family members, the number of laborers, the number of family members with disabilities, and the number of family members incapable of self-care in a household. Household financial conditions include the total household income (excluding government transfers), arable land area, total family savings, and debts. Information on a household's ownership of property is also included: the size of their house, the year when the house was built, and whether a household owns a TV, a laundry machine, a refrigerator, an air conditioner, a computer, an electric bicycle, a motorcycle, a smartphone, an automobile, or other expensive property (jewelry, piano, antique collection, etc.). Village characteristics include population, type (natural, community, or town village), terrain (plain, hilly, or mountainous), share of minorities, share of local population, and per capita arable land area.

In columns 2 to 6, provincial dummies are also included so that the estimation uses only within-province variation in CGVO assignment. Because these social assistance programs are jointly funded by the central and provincial governments, poor households living in the same province should receive roughly equal subsidies, conditional on their assets and socioeconomic conditions.

The estimated coefficients are highly robust to the inclusion of different sets of control variables, suggesting that CGVO assignment is independent of the characteristics of poor households and villages. In the most restrictive specification, column 6, we find that a poor household living in a village with CGVOs could, on average, receive 33 percent more in subsidies than one in a village without CGVOs.

Table 9—CGVOs and Subsidies Received by Poor Households

	(1)	(2)	(3)	(4)	(5)	(6)
CGVO	0.33	0.42	0.44	0.48	0.40	0.33
	(0.16)	(0.16)	(0.16)	(0.16)	(0.16)	(0.16)
HHs members' characteristics	No	Yes	No	No	No	Yes
Financial conditions	No	No	Yes	No	No	Yes
Ownership of properties	No	No	No	Yes	No	Yes
Village characteristics	No	No	No	No	Yes	Yes
Province dummies	No	Yes	Yes	Yes	Yes	Yes
Observations	3,079	3,079	3,072	3,079	3,079	3,072
R^2	0.00	0.14	0.12	0.12	0.11	0.16

Notes: This table reports the associations between CGVO assignment and the subsidies received by the poor households using data from the cross-sectional village governance survey. In total, we are able to match 3,079 poor households with 472 villages. The outcome variable is the total subsidies (log) received by the poor households in 2014. Household members' characteristics include: number of family members, number of laborers, number of family members with disabilities, and number of family members incapable of self-care in a household. Household financial conditions include the following variables: total household income (excluding government transfers, log), arable land area, total family savings (log), and debts (log). The information on a household's ownership of property is also included: the size of their house, the year when the house was built, and whether a household owns a TV, a laundry machine, a refrigerator, an air conditioner, a computer, an electric bicycle, a motorcycle, a smart phone, an automobile, or other expensive property (jewelry, piano, antique collection, etc.). Village characteristics include population, type (natural, community, or town village), terrain village (plain, hilly, or mountainous), share of minority, share of local population, and per capita arable land area. Heteroskedastic-consistent standard errors are reported in the parentheses.

These results imply that, rather than colluding with traditional village officials, CGVOs help to reduce elite capture of pro-poor programs.

VI. Conclusion

The CGVO program is a novel government policy aiming to help the poor in rural China by sending thousands of college graduates to rural villages where they work as assistants to village leaders. Since CGVOs are better educated than traditional village leaders and relatively independent from local interest groups, the government hopes that they can help improve village governance and alleviate poverty.

Our study investigates whether this improvement in rural bureaucrat quality indeed leads to more pro-poor development. We first present a rich set of qualitative evidence showing that the primary role of CGVOs is to help poor households benefit from various social assistance programs and then quantify these findings in a DID setting. Our empirical analysis shows that CGVOs help qualified villagers register for pro-poor programs and thereby increase the number of beneficiaries. The presence of a CGVO increases the subsidized population by 20 percent and reduces the proportion of poor-quality houses by 14 percent.

We examine several other outcomes to understand the underlying mechanisms. First, we find that the CGVO program does not affect household income, village council revenue, and village council spending. This suggests that the increased number of beneficiaries is an outcome of improved pro-poor policy implementation rather than real income shocks to the villagers or village councils. Second, we present evidence that a CGVO substitutes an existing village official, thus improving the

average education level of the village governance team without changing its size. These results suggest that CGVOs' impacts are not simply driven by the introduction of an additional village official. Third, we find that households not only receive subsidies but also on average receive larger amounts. Since CGVOs are relatively independent from local interest groups, their presence in the village governance system reduces elite capture of pro-poor programs.

Our study provides the first quantitative evaluation of the CGVO program, which has important policy implications given its ambitious scale and the enormous cost of running this program.[17] More generally, since our results suggest that CGVOs can significantly improve the implementation of various government pro-poor policies, the presence of CGVOs expands the set of effective social assistance programs that the government can choose from in tens of thousands of villages, which may substantially aid China's rural development and poverty alleviation in the long run.

We conclude by outlining related questions that are beyond the scope of this paper. First, despite the positive findings in this study, it should be noted that our results cannot answer the broader questions of whether the program misallocates human capital or whether it constitutes a cost-effective way of achieving pro-poor development. Second, the personal characteristics determining the success of CGVOs in implementing social policies are not yet clear. Possible factors include a CGVO's major, education quality, age, experience, and motivation. Third, CGVOs play multifaceted roles in village governance, and the question of how best to utilize their human capital and design proper mechanisms to maximize their contribution remains under researched. These issues warrant future research.

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[17] Official statistics on the total spending of the CGVO program are not published. In 2012, the central government of China spent 20,000 yuan ($3,170); 15,000 yuan ($2,377); and 8,000 yuan ($1,268), respectively; supporting each CGVO working in the eastern, central, and western parts of China. If we assume there are 76,600 CGVOs in each region, a back-of-the-envelope calculation shows that the central government spent at least 3 billion yuan ($500 million) on the program in 2012.

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Do College Graduates Serving as Village Officials Help Rural China?

ONLINE APPENDIX

By GUOJUN HE AND SHAODA WANG

Appendix A. CGVO Assignment

In most of China, the assignment of CGVOs is determined entirely by higher levels of government, while villages and CGVOs are not allowed to choose. However, since the exact assignment rules are not known to us, it is important to understand the factors determining CGVO assignment.

There are two main hypotheses regarding assignment decisions. The first is that higher levels of government choose villages based on time-invariant characteristics. For example, governments may prioritize richer and/or larger villages where they expect a CGVO's expertise to help boost economic development. The second hypothesis is that higher levels of government assign CGVOs in response to local economic shocks.

We first test whether the treated villages were systematically different from the control villages before the CGVO program was launched along a variety of socio-economic variables in a cross-sectional setting. We estimate a logit model in which the dependent variable is whether a village has a CGVO during our sample period, and the independent variables are socio-economic conditions in 2006, a year before the CGVO program started to expand.

The regression results are shown in columns (1) to (4) of Appendix Table 1. First, village population and per capita net income are included to test whether CGVO assignments are affected by village size or income. We find no relationship between CGVO assignment and village size or income. Second, we add the outcomes of interest in the regressions, i.e. subsidized population (number of subsidized residents per 1,000 people), poor-quality housing (number of poor-quality houses per 100 households), and registered poor households (number of registered poor households per 100 households). Again, none of them are statistically significant. Third, we include local government size (number of government officials in the

village council) and quality of government officials (proportion of government officials educated to a level of "high school and above") in the regression. The results show that CGVO assignment is uncorrelated with village government size or quality. Finally, a set of time-invariant basic village characteristics are also included, including terrain (flat, hilly or mountainous), its main industry (agriculture, forestry, livestock or fishing), whether the village is located in a suburb, whether it forms a town center, and whether it is a designated poor village. None of them are statistically significant.

An alternative way to test these relationships is to fully exploit the longitudinal structure of the data and estimate the association between CGVO assignment and village-level socioeconomic variables using a logit model with duration dependence. Specifically, the probability of a village receiving a CGVO at time *t* is modeled as:[1]

(1) $$P(CGVO_{it} = 1|X_{it}) = \frac{e^{X_{it}\beta + f(t)}}{1+e^{X_{it}\beta + f(t)}}$$

where $CGVO_{it}$ is a dummy variable, which equals 1 if village *i* has a CGVO in year t, and 0 otherwise, $\mathrm{P}(CGVO_{it} = 1|X_{it}) = h(t, X_{it})$ is the probability of receiving a CGVO conditional on a set of variables, and $f(t)$ is a flexible function of time t.

When the dependent variables are all set to zero, the baseline hazard rate can be written as a function of time duration t, $h_0(t) = \frac{e^{f(t)}}{1+e^{f(t)}}$. $f(t)$ allows the baseline hazard rate of receiving a CGVO to vary over time t. In effect, the logit model has the following form:

(2) $$log\left(\frac{P_{it}}{1-P_{it}}\right) = \beta_0 + \beta_1 * X_{i,2006} + \beta_2 * Z_i + f(t) + \varepsilon_{it}$$

where P_{it} is the probability of receiving a CGVO for village i at time t, $X_{i,2006}$ are the time-invariant welfare measures in 2006 (a year before the CGVO program), and Z_i are the time-invariant basic village characteristics. Time duration $f(t)$ is approximated by a 4th order polynomial function of *t*.[2]

[1] Traditional logit or probit models assume duration independence, i.e. the probability of being treated at any point in time is always the same. This is not a valid assumption here because the probability of receiving a CGVO increases over time. Without taking into account duration dependence, the standard errors estimated from a traditional logit or probit model would be wrong.

[2] Approximating the time duration using a non-parametric method generates similar findings. The results are available upon request.

In columns (5) to (8) of Appendix Table 1, we include the same set of variables as in columns (1) to (4). The findings remain the same: none of these pre-determined village conditions have any effect, indicating that the assignment of CGVOs is likely to be exogenous to the village.[3]

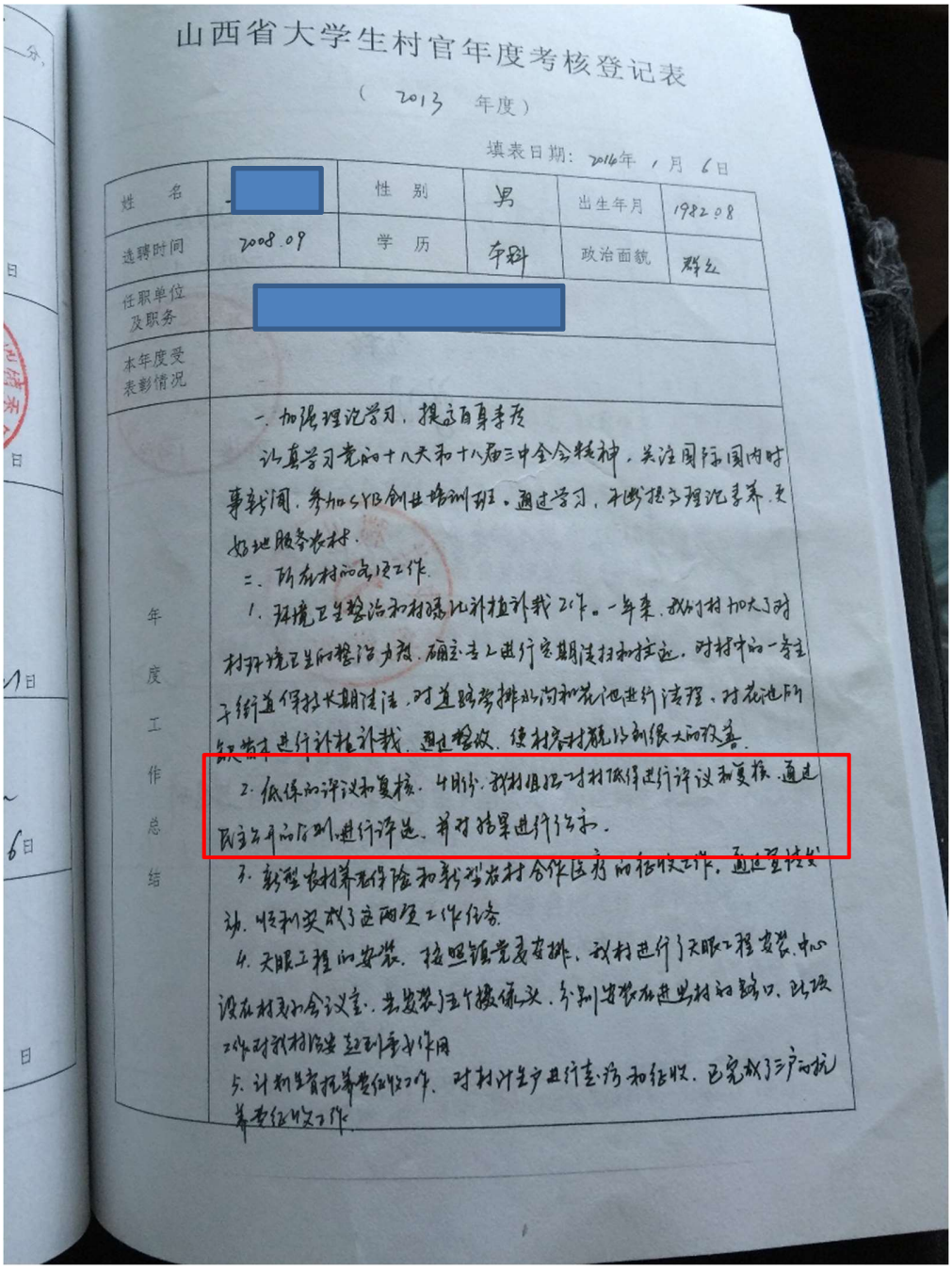
In this longitudinal setting, we can also test the second hypothesis – whether CGVO assignment depends on village-level economic shocks – by including time-varying covariates in the regressions. Appendix Table 2 summarizes the results. The independent variables are changes in village population, income, poor housing, subsidized population, registered poor households, government size and quality of local government officials before the introduction of the CGVO program. None of these variables are statistically significant at a conventional level, indicating that economic shocks before the CGVO program did not affect CGVO assignments.

Whether the assignment decision is driven by time-varying shocks is critical to subsequent impact analysis. To identify causal effects, our main econometric model relies on variations in CGVO assignments across time and place in a difference-in-differences (DID) setting. The results in Appendix Table 2 confirm that CGVO assignments are not correlated with observed time-varying factors, suggesting that DID is likely to be a valid approach for estimating the impacts of the CGVO program.

[3] The conclusions are the same if we use data from other years before 2006.

Appendix B. CGVO Self-Evaluation Forms

Appendix B1: Sample 1



山西省大学生村官年度考核登记表

（ 2013 年度）

填表日期：2016年 1 月 6日

姓名	[redacted]	性别	男	出生年月	1982.08
选聘时间	2008.09	学历	中专	政治面貌	群众
任职单位及职务	[redacted]				
本年度受表彰情况					

年度工作总结

一、加强理论学习，提高自身素质

认真学习党的十八大和十八届三中全会精神，关注国际国内时事政闻，参加SYB创业培训班，通过学习，不断提高理论素养，更好地服务农村。

二、所在村的成绩工作

1. 环境卫生整治和村容村貌的补植补栽工作。一年来，我们村加大了对村环境卫生的整治力度，确定专人进行定期清扫和打扫，对村中的一条主干街道保持长期清洁，对道路旁排水沟和其他进行清理，对花池所缺苗木进行补植补栽，通过整改，使村容村貌比以前有很大的改善。

2. 低保的评议和复核。4月份，我村根据对村低保进行评议和复核，通过民主评议的方式，进行评选，并对结果进行公示。

3. 新型农村养老保险和新型农村合作医疗的征收工作。通过宣传发动，顺利完成了这两项工作任务。

4. 天眼工程的安装。按照镇党委安排，我村进行了天眼工程安装，中心设在村委和会议室，共安装了五个摄像头，分别安装在进出村的路口，此项工作对我村治安起到了重要作用。

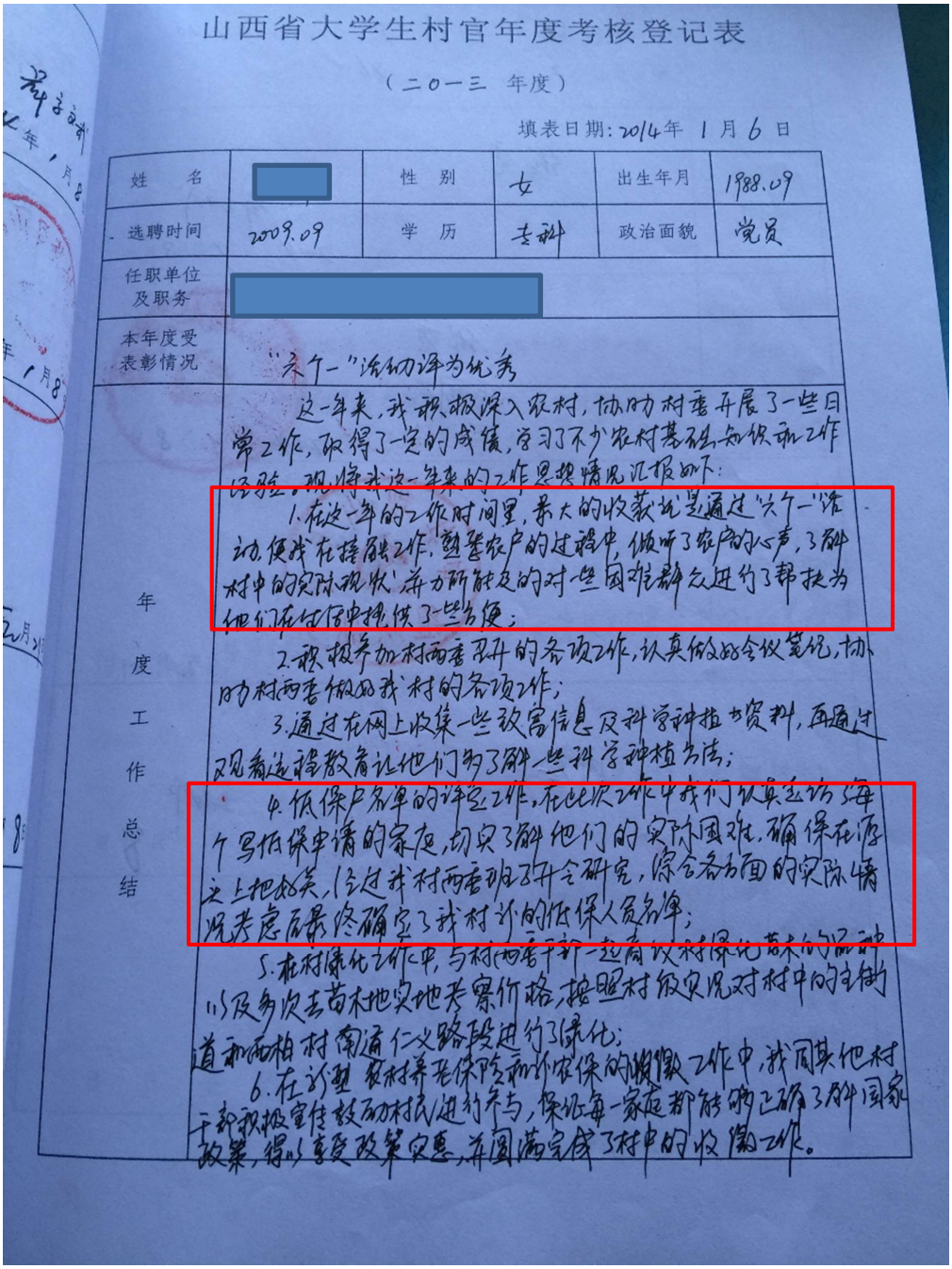
5. 计划生育抚养费征收工作。对村计生户进行查证、核实和征收，已完成了三户的抚养费征收工作。

Translation:

Point 2 (Contribution to the Village): Select and double-check the Poverty Subsidy Applications. "In April (2013), I helped select and double-check the eligibility of the poverty-subsidy applicants. The beneficiaries were democratically determined by group voting, and the results were publicized to the entire village."

Notes: This form is used by Shanxi Province to evaluate the CGVO performance in 2013.

Appendix B2. Sample 2



山西省大学生村官年度考核登记表

（二〇一三 年度）

填表日期：2014年 1月 6日

姓 名	[redacted]	性 别	女	出生年月	1988.09
选聘时间	2009.09	学 历	专科	政治面貌	党员
任职单位及职务	[redacted]				
本年度受表彰情况	"六个一"活动评为优秀				

年度工作总结

这一年来，我积极深入农村，协助村委开展了一些日常工作，取得了一定的成绩，学习了不少农村基础知识和工作经验。现将我这一年来的工作思想情况汇报如下：

1. 在这一年的工作时间里，最大的收获就是通过"六个一"活动，使我在接触工作，熟悉农户的过程中，倾听了农户的心声，了解村中的实际现状，并力所能及的对一些困难群众进行了帮扶为他们在过程中提供了一些方便；

2. 积极参加村两委开展的各项工作，认真做好会议笔记，协助村两委做好我村的各项工作；

3. 通过在网上收集一些致富信息及科学种植方资料，再通过观看远程教育让他们为了解一些科学种植方法；

4. 低保户名单的评定工作，在此次工作中我们认真走访了每个写低保申请的家庭，切实了解他们的实际困难，确保在原之上把好关，经过村两委班子开会研究，综合各方面的实际情况考虑后最终确定了我村的低保人员名单；

5. 在村绿化工作中，与村两委干部一起商议村绿化苗木的品种以及多次去苗木地实地考察价格，根据村级实况对村中的主街道和临相村南通仁义路段进行了绿化；

6. 在协助农村养老保险和新农保的缴费工作中，我同其他村干部积极宣传鼓励村民进行参与，保证每一家庭都能的正确了解国家政策，得以享受政策实惠，并圆满完成了村中的收费工作。

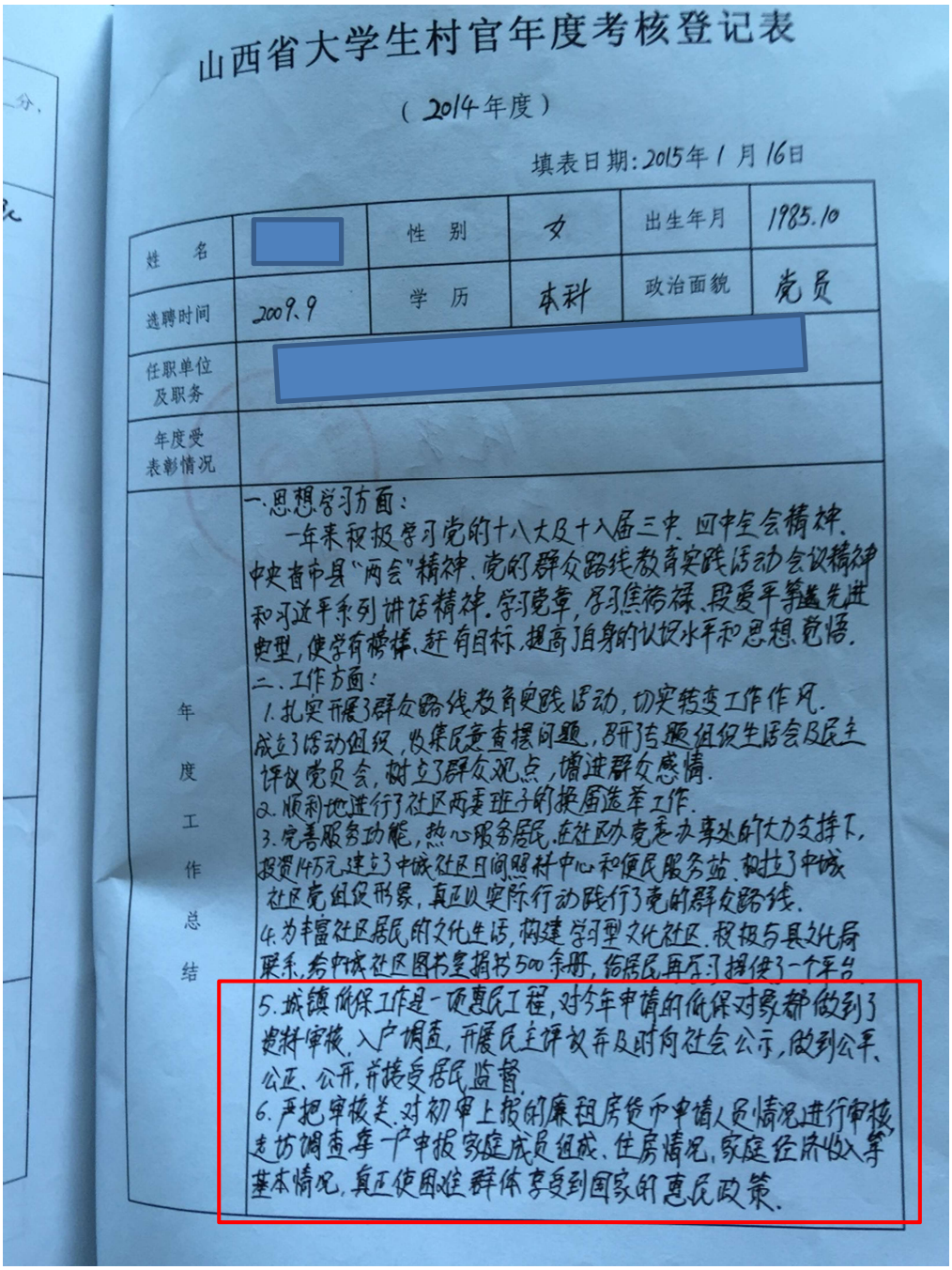
Translation:

Point 1. "Over the past year, I have become more familiar with the conditions of the villagers and better understood their needs through deep conversations with them. I tried to offer some help to those who really have difficulties in life."

Point 4. "When deciding the beneficiaries of the poverty subsidy, I visited every applicant's home and collected detailed information on their living conditions. We held a village committee meeting and finalized the list of beneficiaries."

Notes: This form is used by Shanxi province to evaluate CGVO performance in 2013.

Appendix B3. Sample 3



山西省大学生村官年度考核登记表

（2014年度）

填表日期：2015年1月16日

姓名	[redacted]	性别	女	出生年月	1985.10
选聘时间	2009.9	学历	本科	政治面貌	党员
任职单位及职务	[redacted]				
年度受表彰情况					

年度工作总结

一、思想学习方面：

一年来积极学习党的十八大及十八届三中、四中全会精神、中央省市县"两会"精神、党的群众路线教育实践活动会议精神和习近平系列讲话精神。学习党章，学习焦裕禄、段爱平等先进典型，使学有榜样、赶有目标，提高了自身的认识水平和思想觉悟。

二、工作方面：

1. 扎实开展了群众路线教育实践活动，切实转变工作作风。成立了活动组织，收集民意查摆问题，召开专题组织生活会及民主评议党员会，树立了群众观点，增进群众感情。
2. 顺利地进行了社区两委班子的换届选举工作。
3. 完善服务功能，热心服务居民。在社区办党委办事处的大力支持下，投资14万元建立了中城社区日间照料中心和便民服务站，构建了中城社区党组织形象，真正以实际行动践行了党的群众路线。
4. 为丰富社区居民的文化生活，构建学习型文化社区，积极与县文化局联系，为中城社区图书室捐书500余册，给居民再学习提供了一个平台。
5. 城镇低保工作是一项惠民工程，对今年申请的低保对象都做到了资料审核、入户调查，开展民主评议并及时向社会公示，做到公平、公正、公开，并接受居民监督。
6. 严把审核关，对初审上报的廉租房货币申请人员情况进行审核走访调查每一户申报家庭成员组成、住房情况、家庭经济收入等基本情况，真正使困难群体享受到国家的惠民政策。

Translation:

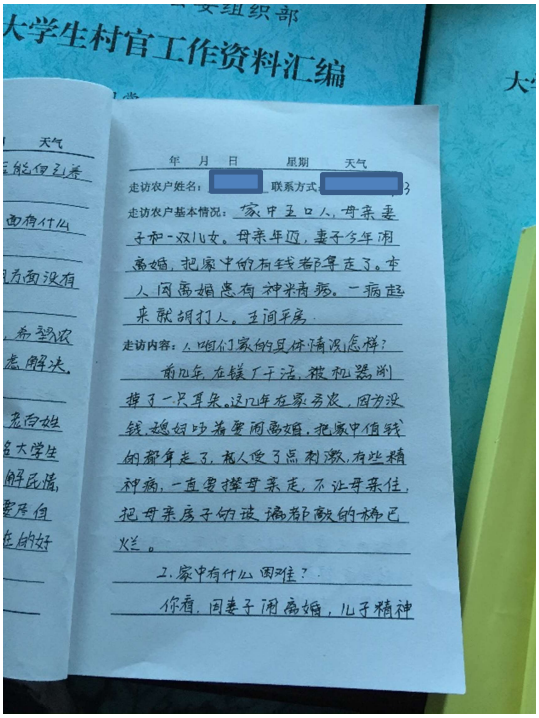
Point 5. "For every poverty subsidy applicant, I strictly followed the procedures of screening application materials, conducting household surveys, organizing group evaluations, and publicizing results."

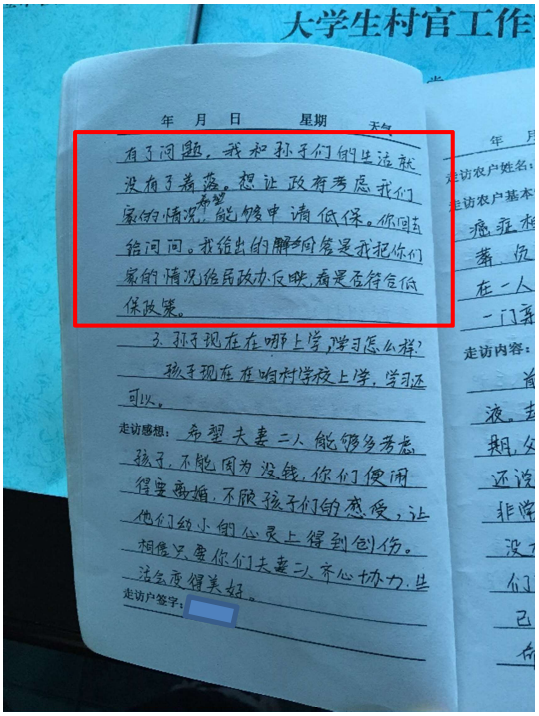
Point 6. "For all of the applicants for the government's subsidized housing program, I screened their materials, conducted household surveys, and especially focused on checking their current housing conditions, demographic compositions, and financial situations."

Notes: This form is used by Shanxi province to evaluate CGVO performance in 2014.

Appendix C. Village Condition Notebooks

Appendix C1. Sample 1





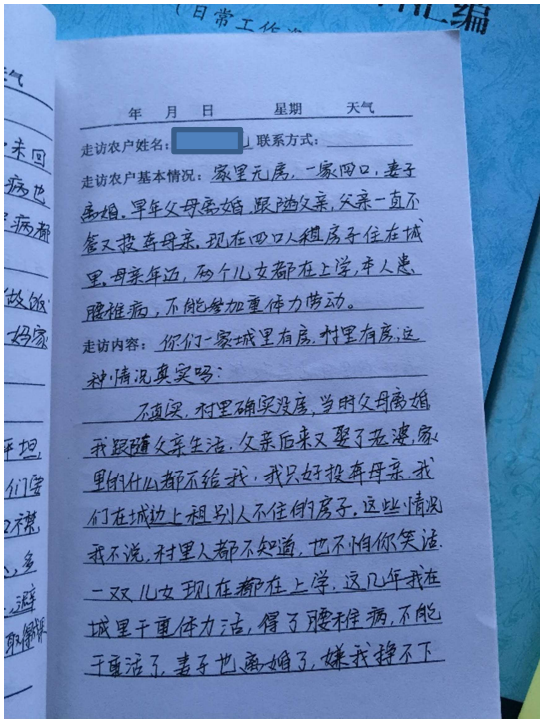
Translation:

The villager said: "Please help relay the actual conditions of our family to the government and ask them whether we qualify for subsidies."

The CGVO responded: "I will inform the local Bureau of Civil Affairs about your conditions and see whether you qualify for the subsidy programs."

Notes: The village condition notebooks were used by CGVOs to record their daily work and document villagers' living conditions. These documents are archived by the Organization Department of the Central Committee of the Communist Party of China.

Appendix C2. Sample 2



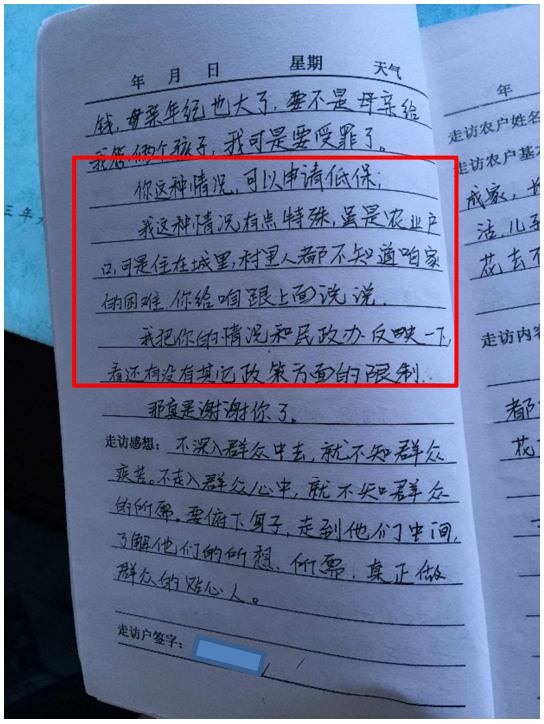
年 月 日 星期 天气

走访农户姓名：[redacted] 联系方式：

走访农户基本情况：家里无房，一家四口，妻子离婚，早年父母离婚，跟随父亲，父亲一直不管又投奔母亲，现在四口人租房子住在城里，母亲年迈，两个儿女都在上学，本人患腰椎病，不能参加重体力劳动。

走访内容：你们一家城里有房，村里有房，这种情况真实吗？

不瞒您，村里确实没房，当时父母离婚我跟随父亲生活，父亲后来又娶了继婆，家里的什么都不给我，我只好投奔母亲，我们在城边上租别人不住的房子，这些情况我不说，村里人都不知道，也不怕你笑话，一双儿女现在都在上学，这几年我在城里干重体力活，得了腰椎病，不能干重活了，妻子也离婚了，媳妇撑不下



年 月 日 星期 天气

钱，母亲年纪也大了，要不是母亲给我给他个孩子，我可是要受罪了。

你这种情况，可以申请低保。

我这种情况有点特殊，虽是农业户口，可是住在城里，村里人都不知道咱家的困难，你给咱跟上面说说。

我把你的情况和民政办反映一下，看还有没有其它政策方面的限制。

那真是谢谢你了。

走访感想：不深入群众中去，就不知群众疾苦。不走入群众心中，就不知群众的所需。要俯下身子，走到他们中间，了解他们的所想、所需，真正做群众的贴心人。

走访户签字：[redacted]

Translation:

The CGVO advised the villager: "Given your conditions, you should consider applying for the poverty subsidy."

The villager responded: "My case is a special one. Although I am a rural resident, my house is in the suburban areas close to the city, so the villagers are not familiar with my real conditions and don't really understand my difficulties. Please help relay my information to the government."

The CGVO responded: "I will talk to the local Bureau of Civil Affairs and see what they can do."

Notes: The village condition notebooks were used by CGVOs to record their daily work and villagers' living conditions. These documents are archived by the Organization Department of the Central Committee of the Communist Party of China.

Appendix Table A1. Probability of CGVO Assignment: Pre-CGVO Levels

	CGVO Assignment							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Population	0.18	0.20	0.07	0.17	0.18	0.22	0.12	0.26
	(0.23)	(0.31)	(0.36)	(0.37)	(0.20)	(0.28)	(0.28)	(0.30)
Per capita Income	-0.05	-0.32	-0.40	-0.32	-0.03	-0.32	-0.43	-0.41
	(0.28)	(0.43)	(0.45)	(0.50)	(0.27)	(0.43)	(0.45)	(0.47)
Poor Housing		0.04	0.02	0.09		-0.01	0.00	0.04
		(0.20)	(0.20)	(0.22)		(0.18)	(0.18)	(0.19)
Subsidized Population		-0.21	-0.22	-0.15		-0.21	-0.21	-0.11
		(0.40)	(0.40)	(0.42)		(0.34)	(0.35)	(0.37)
Registered Poor HHs		-0.05	-0.05	-0.13		-0.11	-0.11	-0.21
		(0.32)	(0.32)	(0.33)		(0.26)	(0.26)	(0.28)
Government Size			0.07	0.05			0.05	0.04
			(0.10)	(0.09)			(0.04)	(0.04)
Government Quality			-0.00	-0.01			0.00	-0.00
			(0.01)	(0.01)			(0.01)	(0.01)
Terrain				0.38				0.29
				(0.41)				(0.35)
Pillar Industry				0.25				0.59
				(0.79)				(0.69)
Suburb				0.24				0.23
				(0.50)				(0.39)
Town Center				-0.30				-0.16
				(0.43)				(0.34)
Designated Poor Village				0.04				-0.08
				(0.78)				(0.62)
Precipitation				-59.17				-98.75
				(112.64)				(108.80)
Temperature				0.01				0.01
				(0.02)				(0.02)
Time Duration	-				4th Order Polynomial			
Psudo R^2	0.00	0.01	0.02	0.03	0.19	0.21	0.21	0.22
Observations	233	143	143	143	2,421	1,479	1,476	1,476

Notes : The probability of CGVO assignment is estimated using logit models. In columns (1) - (4), we estimate cross-sectional regressions in which the dependent variable is the eventual treatment status and the independent variables are village characteristics in 2006. Robust standard errors are reported in parentheses. In columns (5)-(8), we estimate the associations using a logit model with duration dependence with the panel data. We include a fourth order polynomial function to approximate the duration. Standard errors are clustered at the village level and reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table A2. Probability of CGVO Assignment: Pre-CGVO Shocks

	CGVO Assignment					
	(1)	(2)	(3)	(4)	(5)	(6)
Δ in Village Population	0.30	0.37	0.31	0.31	0.32	0.30
(by 1000)	(0.27)	(0.29)	(0.27)	(0.28)	(0.27)	(0.27)
Δ in per capita Income	0.19	0.13	0.37*	0.15	0.19	0.20
(by 1000 yuan)	(0.15)	(0.16)	(0.19)	(0.16)	(0.14)	(0.14)
Δ in the Share of Poor Housing		-0.93				
(by 100)		(0.59)				
Δ in Subsidy Rate			0.33			
(by 100)			(0.24)			
Δ in the Share of Registered Poor HHs				0.21		
(by 100)				(1.03)		
Δ in Government Size					-7.72	
(by 100)					(7.47)	
Δ in Government Quality						0.04
(by 100)						(0.92)
Time Duration	4th Order Polynomial					
Psudo R^2	0.15	0.15	0.18	0.15	0.15	0.15
Observations	1,803	1,463	1,184	1,660	1,799	1,799

Notes: The probability of CGVO assignment is estimated using logit models with duration dependence. We include a fourth order polynomial function to approximate the duration. The independent variables are changes in socioeconomic conditions before the CGVO program. Standard errors are clustered at the village level and reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table D1. Robustness Checks: CGVO and Subsidies

	Subsidized Population (per 1000, log)				Poor Housing (per 100 households, log)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CGVO	0.18**	0.18**			-0.07	-0.07		
	(0.07)	(0.07)			(0.05)	(0.05)		
	(0.12)	(0.12)			(0.05)	(0.05)		
	(0.10)	(0.10)			(0.07)	(0.07)		
L.CGVO			0.20***	0.20***			-0.15***	-0.15***
			(0.07)	(0.07)			(0.05)	(0.06)
			(0.12)	(0.12)			(0.08)	(0.10)
			(0.11)	(0.11)			(0.10)	(0.10)
Controls	N	Y	N	Y	N	Y	N	Y
Village FE	Y	Y	Y	Y	Y	Y	Y	Y
P-Y FE	Y	Y	Y	Y	Y	Y	Y	Y
Obs.	2,102	2,102	2,102	2,102	2,417	2,417	2,417	2,417
R^2	0.67	0.67	0.67	0.67	0.78	0.78	0.78	0.78

Notes: This table estimates the impacts of CGVOs on poverty subsidies and poor-quality housing using within province variation in CGVO assignment. We include village fixed effects and province-year fixed effects in all regressions. Below the estimated coefficients are standard errors clustered at the province-year, provincial and village level respectively. The asterisks indicate significance levels corresponding to standard errors clustered at the province-year level. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table D2. Robustness Checks: Registration Effect

	Registered Poor Households (per 100, log)				People with Disabilities (per 1000, log)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CGVO	0.16***	0.16***			0.08	0.08		
	(0.05)	(0.05)			(0.07)	(0.07)		
	(0.05)	(0.05)			(0.08)	(0.08)		
	(0.08)	(0.08)			(0.07)	(0.08)		
L.CGVO			0.20***	0.20***			0.12*	0.13*
			(0.06)	(0.06)			(0.07)	(0.07)
			(0.07)	(0.07)			(0.10)	(0.10)
			(0.08)	(0.08)			(0.10)	(0.10)
Controls	N	Y	N	Y	N	Y	N	Y
Village FE	Y	Y	Y	Y	Y	Y	Y	Y
P-Y FE	Y	Y	Y	Y	Y	Y	Y	Y
Obs.	2,654	2,654	2,654	2,654	1,826	1,826	1,826	1,826
R^2	0.69	0.69	0.69	0.69	0.75	0.75	0.75	0.75

Notes: This table estimates the impacts of CGVOs on registered poor households and people with disabilities using within province variation in CGVO assignment. We include village fixed effects and province-year fixed effects in all regressions. Below the estimated coefficients are standard errors clustered at the province-year, provincial and village level respectively. The asterisks indicate significance levels corresponding to standard errors clustered at the province-year level. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table E1. Robustness Checks: Dropping Villages with CGVOs before 2007

	Subsidized Population (per 1000, log)				Poor Housing (per 100 households, log)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CGVO	0.20*	0.19			-0.07	-0.07		
	(0.11)	(0.11)			(0.05)	(0.05)		
	(0.10)	(0.10)			(0.07)	(0.07)		
	(0.11)	(0.11)			(0.07)	(0.07)		
L.CGVO			0.23**	0.22**			-0.13*	-0.13*
			(0.10)	(0.10)			(0.07)	(0.07)
			(0.11)	(0.11)			(0.08)	(0.08)
			(0.11)	(0.11)			(0.08)	(0.08)
Controls	N	Y	N	Y	N	Y	N	Y
Village FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Obs.	2,067	2,067	2,067	2,067	2,376	2,376	2,376	2,376
R^2	0.62	0.62	0.62	0.62	0.75	0.75	0.76	0.76

Notes: This table estimates the impacts of CGVOs on poverty subsidies and poor-quality housing. We exclude villages that received CGVOs before 2007 from the sample. We probe the robustness of estimate accuracy by clustering the standard errors at three different levels: provincial, village, and village and province-year level (multi-way clustering suggested by Cameron, Gelbach, and Miller (2011)). These standard errors are respectively reported in the parentheses below the estimated coefficients. Our preferred specification clusters standard errors at the provincial level. As we only have 19 provinces, we address the small sample bias in the clustered standard errors using wild bootstrapping, a method recommended by Cameron, Gelbach and Miller (2008). The significance levels indicated by asterisks are based on wild bootstrapped p-values, which are similar to the simple significance levels using standard errors clustered at the provincial level. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table E2. Robustness Checks: Dropping Villages with CGVOs before 2007

	Registered Poor Households (per 100, log)				People with Disabilities (per 1000, log)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CGVO	0.09	0.09			0.09	0.09		
	(0.06)	(0.06)			(0.07)	(0.07)		
	(0.07)	(0.07)			(0.07)	(0.07)		
	(0.08)	(0.08)			(0.08)	(0.08)		
L.CGVO			0.15**	0.15**			0.16*	0.16*
			(0.07)	(0.07)			(0.09)	(0.09)
			(0.08)	(0.08)			(0.09)	(0.09)
			(0.09)	(0.09)			(0.10)	(0.09)
Controls	N	Y	N	Y	N	Y	N	Y
Village FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Obs.	2,608	2,608	2,608	2,608	1,792	1,792	1,792	1,792
R^2	0.65	0.65	0.65	0.65	0.73	0.73	0.73	0.73

Notes: This table estimates the impacts of CGVOs on registered poor households and people with disabilities. We exclude villages that received CGVOs before 2007 from the sample. We probe the robustness of estimate accuracy by clustering the standard errors at three different levels: province, village, and village and province-year level (multi-way clustering suggested by Cameron, Gelbach, and Miller (2011)). These standard errors are respectively reported in the parentheses below the estimated coefficients. Our preferred specification clusters standard errors at the provincial level. As we only have 19 provinces, we address the small sample bias in the clustered standard errors using wild bootstrapping, a method recommended by Cameron, Gelbach and Miller (2008). The significance levels indicated by asterisks are based on wild bootstrapped p-values, which are similar to the simple significance levels using standard errors clustered at the provincial level. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table F1. Robustness Checks: Using Alternative CGVO Dummy

	Subsidized Population (per 1000, log)				Poor Housing (per 100 households, log)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CGVO	0.20*	0.20*			-0.09*	-0.09**		
	(0.11)	(0.11)			(0.04)	(0.04)		
	(0.10)	(0.10)			(0.07)	(0.07)		
	(0.11)	(0.11)			(0.07)	(0.07)		
L.CGVO			0.20*	0.20*			-0.14**	-0.14**
			(0.10)	(0.10)			(0.06)	(0.06)
			(0.10)	(0.10)			(0.08)	(0.08)
			(0.10)	(0.11)			(0.08)	(0.08)
Controls	N	Y	N	Y	N	Y	N	Y
Village FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Obs.	2,102	2,102	2,102	2,102	2,417	2,417	2,417	2,417
R^2	0.61	0.61	0.61	0.61	0.76	0.76	0.76	0.76

Notes: This table estimates the impacts of CGVOs on poverty subsidies and poor-quality housing using an alternative CGVO treatment dummy. In these regressions, a village is considered treated starting from the first year it received a CGVO, and until the end of our study period in 2011, regardless of whether a CGVO left a village during the period. We probe the robustness of estimate accuracy by clustering the standard errors at three different levels: provincial, village, and village and province-year level (multi-way clustering suggested by Cameron, Gelbach, and Miller (2011)). These standard errors are respectively reported in the parentheses below the estimated coefficients. Our preferred specification clusters standard errors at the provincial level. As we only have 19 provinces, we address the small sample bias in the clustered standard errors using wild bootstrapping, a method recommended by Cameron, Gelbach and Miller (2008). The significance levels indicated by asterisks are based on wild bootstrapped p-values, which are similar to the simple significance levels using standard errors clustered at the provincial level. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table F2. Robustness Checks: Using Alternative CGVO Dummy

	Registered Poor Households (per 100, log)				People with Disabilities (per 1000, log)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CGVO	0.10*	0.10*			0.12	0.11		
	(0.06)	(0.06)			(0.07)	(0.07)		
	(0.07)	(0.07)			(0.07)	(0.07)		
	(0.08)	(0.08)			(0.08)	(0.08)		
L.CGVO			0.14**	0.14**			0.16*	0.16*
			(0.06)	(0.06)			(0.09)	(0.09)
			(0.08)	(0.08)			(0.09)	(0.08)
			(0.09)	(0.09)			(0.09)	(0.09)
Controls	N	Y	N	Y	N	Y	N	Y
Village FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Obs.	2,654	2,654	2,654	2,654	1,826	1,826	1,826	1,826
R^2	0.65	0.65	0.65	0.65	0.73	0.73	0.73	0.73

Notes: This table estimates the impacts of CGVOs on registered poor households and people with disabilities using an alternative CGVO treatment dummy. In these regressions, a village is considered treated starting from the first year it received a CGVO and until the end of our study period in 2011, regardless of whether a CGVO left a village during the period. We probe the robustness of estimate accuracy by clustering the standard errors at three different levels: provincial, village, and village and province-year level (multi-way clustering suggested by Cameron, Gelbach, and Miller (2011)). These standard errors are respectively reported in the parentheses below the estimated coefficients. Our preferred specification clusters standard errors at the provincial level. As we only have 19 provinces, we address the small sample bias in the clustered standard errors using wild bootstrapping, a method recommended by Cameron, Gelbach and Miller (2008). The significance levels indicated by asterisks are based on wild bootstrapped p-values, which are similar to the simple significance levels using standard errors clustered at the provincial level. *** p<0.01, ** p<0.05, * p<0.1.