

The Fiscal Logic of Responsiveness: Public Finance, Elections, and Public Goods Provision in Rural China*

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This Draft: January 7, 2023

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Word count: 11,790 words

Abstract

Governmental fiscal transfers can be important tools for redistributing resources and enhancing public services in areas with limited local resources. Meanwhile, politicians can use fiscal transfers to build patronage networks, weaken opposition candidates, or engage in rent-seeking. An understudied feature of governmental transfers is that local governments can become fiscally dependent on higher-level government. This dependence might lead local officials to favor the priorities of higher-level government while compromising responsiveness to local residents. Using panel data from Chinese villages, I demonstrate that when villages become more dependent on fiscal transfers from townships, they provide fewer public goods to villagers, pay more wages to village elites, and have stronger incentives to enforce the policies favored by higher-level governments. The results also suggest that fiscal transfers will not undermine local representation when electoral competition for village leadership positions exists.

Keywords: China, public finance, fiscal transfers, public goods, government responsiveness

*The author thanks Bruce Bueno de Mesquita, Amy Catalinac, Yishuang Li, Zhaotian Luo, Dan Mattingly, Jeff Nugent, Julia Payson, Adam Przeworski, Pablo Querubin, Peter Rosendorff, Chris Schwarz, Alastair Smith, Shui-Yan Tang, Yang Yao, Hye Young You, and Junlong Zhou for helpful discussions, comments, and suggestions. The author is also grateful for the comments from participants at the annual conference of Midwest Political Science Association, National School of Development at Peking University, School of Public and International Affairs at Fudan University, the Chinese Forum on Public Administration at Xi'an Jiaotong University, and Department of Politics at New York University.

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1 Introduction

Fiscal transfers are popular governmental tools for promoting economic development and the provision of public services in less developed regions. Yet the empirical evidence for their effectiveness is mixed. Earlier research has found that fiscal transfers may breed political favoritism, corruption, and waste of resources (Brollo & Nannicini, 2012; Brollo *et al.* , 2013; Finan & Mazzocco, 2016; Reinikka & Svensson, 2004; Carozzi & Repetto, 2016). Why do government fiscal transfers that are ostensibly designed to strengthen governance sometimes weaken it?

While there is no universal answer to this puzzle, earlier research has pointed to the motivation that politicians use fiscal transfers to win elections (referred to hereafter as “electoral capture”). For example, previous studies show that politicians seek electoral advantages by sending more transfers to places with more swing voters, co-partisans, or co-ethnics rather than to economically less-developed regions (Arulampalam *et al.* , 2009; Dahlberg & Johansson, 2002; Bracco *et al.* , 2015; Banful, 2011). Although compelling in many democratic settings, electoral capture cannot serve as the theoretical foundation for understanding transfers in places where leaders are not elected.

In the absence of electoral incentives, we might believe that government transfers are more likely to be used to improve public goods provision, especially in the less economically developed portions of non-democratic societies. However, it is also plausible that something akin to electoral capture may dominate the incentives behind fiscal transfers even in non-democratic societies. Despite this possibility, to my knowledge there is little research into the equivalent incentives in non-electoral settings. For instance, in a recent review of the research on distributive politics, Golden & Min (2013) indicates that “studies of distributive politics have almost all been undertaken in democratic political systems” (p.75) and as a result, “we have little knowledge of the criteria used by unelected political leaders in the distribution of goods and services” (pp.75-76). This paper is an attempt to understand how government transfers are used in a one-party state.

I propose an alternative explanation for the pernicious influence of fiscal transfers that extends the deeper logic of “electoral capture” to non-electoral settings. The core of the argument is that strategically deployed fiscal transfers create a form of local-government dependence on higher-level government. Those politicians awarding transfer payments can use the money they control to incentivize local elites to deliver the policy outcomes that higher-level officials desire. The local official may comply because, in doing so, he (it is almost always a “he” in China) captures increased income and rent-seeking opportunities. Such concessions granted to higher-level authorities in exchange for personal improvements for local elites probably come at the expense of their “constituents.” As a result of these changes to local responsiveness and representation mechanisms, we should see less public goods provision and more rent-seeking activities in local governments with a high-level of dependence on fiscal transfers.

I empirically test these implications of fiscal dependence in the context of Chinese village governance. Using a nationally representative survey of roughly 800 Chinese villages between 2005 and 2008, I investigate the extent to which the dependence on fiscal transfers influenced local public goods provision or increased compensation for village officials. To foreshadow the results, they are broadly and robustly consistent with the theoretical expectations: a higher level of dependence on fiscal transfer means fewer public goods in the village and higher compensation for village leaders who are responsive to their township superiors rather than their village’s residents. Furthermore, with a nationally representative survey of roughly 9200 rural households in 2002, I show that fiscal dependence indeed reduced villager participation in village governance and, as anticipated, was associated with more stringent enforcement of the One Child Policy and the collection of the agricultural tax, both of which were policies favored by higher-level officials. Finally, I also demonstrate that these pernicious consequences of fiscal dependence could be ameliorated if the village leadership were elected or if the usage of funding required democratic participation.

This paper makes contributions to several strands of literature. First, I am not the first

to argue that fiscal transfers may not be used to further public interests. For instance, in the context of China, fiscal transfers for the New Socialist Countryside Campaign under the Hu Jintao administration were not always spent in a way favored by villagers. Instead, local officials made the funding decision based on the superior's instructions or central policies (Looney, 2015). Furthermore, it was not uncommon that rural local officials used fiscal transfers for their private benefits (Liu *et al.* , 2009) or distributed the funding to the privileged and politically connected groups (Lin & Wong, 2012). In addition to these problems, my analysis shows that the *dependence* on external fiscal resources per se would undermine local accountability and public goods provision, even though fiscal transfers were created for good intentions.

Moreover, the paper also speaks to the burgeoning literature on government responsiveness in countries that lack electoral incentives. Earlier research reports that characteristics of local residents (e.g., race (Distelhorst *et al.* , 2014)), the threat of collective action (Chen *et al.* , 2016), the local industrial structures (Distelhorst & Hou, 2017), and natural resources (Hong, 2018) influence the responsiveness of appointed Chinese politicians who lack electoral incentives. Here, I draw attention to another understudied feature of local government, namely, the level of dependence on fiscal transfers. Thus, the analysis demonstrates how dependence on fiscal transfers influences the government's responsiveness to local residents. My analysis also further provides evidence to the "no taxation no representation" logic with the micro-level village and survey data in China. In particular, this paper also finds that village election and democratic participation could ameliorate the inherent limited of fiscal transfers widely recorded in the existing literature (Hines & Thaler, 1995).

The analysis here also contributes to the literature on rural politics in China. The recent wave of studies of rural China has been quite successful in showing how various informal village institutions help (or do not help) improve public goods provision (Tsai, 2007; Xu & Yao, 2015; Mattingly, 2016) and how the institutionalization of village elections has improved rural governance in various ways (Martinez-Bravo *et al.* , 2011, 2014; Luo *et al.* , 2007;

Manion, 2006). Building on these papers, I further demonstrate that the fiscal structure of village government revenue could also influence the quality of public goods provision in rural China. As well, my analysis demonstrates the importance of looking beyond internal politics within villages. To understand village outcomes it is necessary that we study the relationships between villages and the Chinese state. Indeed, the results here demonstrate a mechanism by which fiscal relationships between villages and local governments in China affect village-level politics.

2 Fiscal Dependence and Government Responsiveness

Why do fiscal transfers designed to strengthen local governance sometimes weaken it? The major explanation for this question in the literature on distributive politics is that the distribution of fiscal transfers is election-driven (see Golden & Min (2013) for a review of this literature). In current accounts, fiscal transfers are allocated to help politicians win their election rather than to help improve local governance. Because transfers are not allocated to the places that really need them, fiscal transfers may not promote public goods provision; meanwhile, the politics involved in transfer allocation breeds elite capture and corruption. However, this explanation based on the electoral incentives cannot explain the poor performance of fiscal transfers in settings politicians are not elected.

I take a view of fiscal transfers that is similar to analyses regarding the impact of natural resources or foreign aid. That is, fiscal transfers can be seen as a revenue windfall¹ or as a form of domestic aid. Hence, the logic in the literature of the resource curse and foreign aid can be applied to the case of fiscal transfers. More specifically, I argue that there are two changes to local accountability mechanisms brought about by dependence on fiscal transfers. These two changes form the basis of my two theoretical predictions, which I will test in the sections that follow.

First, local officials become less responsive to the villagers they ostensibly serve. Following

¹To see fiscal transfers as windfall is not new, see Paler (2013) and Gervasoni (2010) for instance.

the logic of “rentier states” in the literature on the resource curse, once the government generates most of its revenue from windfalls such as oil, it will no longer rely on residents’ tax contributions to run the government (see [Ross \(2001\)](#) for a review for the “rentier state” literature). In the end, a local government that depends on fiscal transfers can still keep a large portion of its revenue without the support of “the people”; that is, residents in the local community. Hence, local governments will not have financial incentives to respond to people’s demands. Moreover, on the people’s side, local residents will have much weaker incentives to monitor the performance of local governments if they do not pay tax or make other financial contributions to the local government ([Paler, 2013](#)). Taken together, local government will be less responsive to people if it depends on fiscal transfers as the major source of revenue.

Second, local officials will become more accountable to the higher-level government. This is because, following the logic of “aid-for-policy” in the foreign aid literature ([Bueno de Mesquita *et al.*, 2003](#); [Bueno de Mesquita & Smith, 2009](#)), the higher-level government can determine whether or not the local government can obtain fiscal transfers. As with foreign aid, local officials make deals with their superiors. These “deals” trade policy concessions to higher officials in exchange for revenue that can be used however the local official chooses. Hence, for such local governments with a high level of fiscal dependence, we should expect to see that they are more willing to deliver policies that higher-level government cares about. To the extent that such goals sought by the higher-level government differ from the preferences of local residents, the local leadership’s responsiveness to their political superiors results in the allocation of resources in ways that are unrelated to the local residents’ welfare.

Once the local government’s priorities have been diverted away from the people’s demands and toward the interests of upper-level government, we should expect that these local governments will provide fewer public goods to local residents. Moreover, because neither local residents nor upper-level government officials are willing (or able in the case of residents) to hold local, fiscally-dependent officials accountable, these officials are more likely to be

corrupt, diverting public resources for personal benefits. These implications are summarized as the following hypotheses:

Hypothesis 1: *The more dependent a local government is on fiscal transfers, the fewer public goods it will provide to its residents.*

Hypothesis 2: *The more dependent on fiscal transfers that the local government is, the more private benefits the local government will provide to its local elites.*

3 Institutional Background of Rural China

To understand why the linkage between village public revenue and township administration of fiscal transfers is the appropriate setting to test the hypotheses, it is necessary that we understand the structure of town-to-village transfers and how those transfers provide concrete opportunities for political advancement. Once that important background information has been explained we can then turn to the empirical analysis.

3.1 Public Finance in Rural China

Villages are at the bottom of the administrative hierarchy in the Chinese political system. Although villages are formally defined as “self-governing entities” in law, they functioned as the de facto grassroots administrative units under township governments in rural China. This means that village committees (i.e., the organizations that function as the village government) have some flexibility in designing their policies, but are also constantly asked to enforce the policies promulgated by higher-level governments.

At least during the period of time investigated here (i.e., from 1998 to 2008 under the Jiang Zemin and Hu Jintao administrations), the central government has announced several rural reforms that demanded village officials’ cooperation, including the elimination of agricultural tax in 2006 (as well as the earlier tax-for-fee reform that gradually replaced unregulated fees by taxes) and the New Socialist Countryside Campaign in 2005 that aimed at

promoting the living conditions and infrastructure in rural China. Furthermore, the enforcement of the One Child Policy that each family should give birth to only one child continued to meet resistance in rural China. Research shows that grassroots officials were the key to the implementation of such challenging policies as the One Child Policy (Mattingly, 2020). However, village officials may not always answer to the demand of their superiors. These officials sometimes ignore or even protest against policies enacted by higher-level governments. Hence, public finance plays a vital role in influencing villages' policy choices.

Villages' public financing is generated either from within or from outside the village. In the late 1990s and early 2000s, villages had at least three major ways to generate revenues from within. First, profits from village-owned enterprises could be used to finance village government. This potential source of revenue faces two constraints. Most villages did not run such enterprises, and among those that did, profits from village-owned enterprises often were unstable. Second, it was possible for village officials to lease out equipment and natural resources such as land, ponds, and mountains to finance government operations. Third, village officials might collect financial contributions from village residents, known as "One Project One Decision (OPOD)" funding, to finance public projects in the village. However, to collect OPOD contributions from villagers, local government needed to go through various democratic procedures. Given a choice, villagers often resisted making such payments.

As an alternative to locally-generated revenue, funds could have come from outside the village. Such revenue in the 1990s and early 2000s came mainly from higher-level government entities through two mechanisms: (1) special appropriations and (2) general fiscal transfers. Special appropriations were supposed to be used for specified purposes. For instance, a special appropriations for education was supposed to be used for primary education in rural China; special appropriations for the Grain for Green Project were expected to be used to compensate rural households that volunteered to give up farming and plant trees on existing farmlands. General fiscal transfers, in contrast, could be used in any way the village government saw fit.

Although special appropriations and general fiscal transfers were supposed to work differently, these two types of funds were highly fungible once they reached the hands of village officials during the time period studied here, namely the early 2000s.² Hence, it proved difficult for higher-level governments to trace exactly how these funds were used within a village. [Zhou \(2017\)](#), for instance, noted that the special appropriation for the Grain for Green Project from the central government to villages could easily be diverted by village officials for other uses. Although it was responsible for supervising the use of such funds at the village level, the township government often found it hard to detect such misappropriations and often acquiesced. Instead of enforcing the intended use of such funds, they were often used by township officials to encourage village officials to enforce policies that the township officials cared about. In fact, township government also usually misused “special appropriations” intended for specific purposes ([Wu, 2018](#)). For these reasons, I count both types of outside revenues as “fiscal transfers” because both types were frequently used freely by village governments and both were administered by township government. Altogether, these fiscal transfers account for roughly 46 percent of an average village government’s fiscal revenue.

3.2 Political Promotion in Rural China

A major advantage of using rural China as the empirical setting is that township officials (i.e., transfer distributors) are not elected and so electoral capture as an explanation is by definition excluded. Then we must ask, in the absence of electoral signals, how are township officials evaluated and promoted and how does that relate to the incentives behind providing fiscal transfer?

Township officials are selected and promoted by county government ([Zhao, 2013](#)). County governments have designed clear criteria both to evaluate the performance of township officials and to determine whether they are to be promoted. These criteria give strong emphasis

²The fiscal management of village governments in China may have significantly improved later, but that was clearly not the case in the early 2000s.

to the advancement of county-level policy objectives. Although the Hu Jintao administration launched the New Socialist Countryside Campaign that aimed at upgrading the transportation infrastructure, housing, and healthcare in rural China by pouring massive financial and cadre resources into villages and countryside (Looney, 2021), scholars have found that a small set of policy items unrelated to these policy objective, nevertheless, were always prioritized in evaluating township officials' performance. These important policies usually appear in the form of the "one vote veto" principle; that is, if certain key political goals were not met, an official would not even be considered for promotion. Such goals usually included the implementation of the One Child Policy, political stability, meaning that no villager traveled to the provincial capital or to Beijing to make a political appeal, and collection of the agricultural tax, among others. For instance, Liu *et al.* (2013) reported on a survey in 2000, which showed that 45.61 percent of county governments put agricultural tax collection, 11.4 percent put political stability, and 11.4 percent put implementation of the One Child Policy as the most important factor for evaluating township officials.

Clearly, these policy goals were unpopular among villagers and were unrelated to, if not contrary to, the villagers' perception of their own welfare. For instance, the enforcement of the One Child Policy in rural China usually required local officials to give forced abortions to women bearing a second child. Therefore, following the promotion incentives embedded in China's rural politics, township officials should have a stronger incentive to implement policies unrelated to villagers' welfare (but highly connected to their own political promotion) than to advance the provision of local public goods and policies that enjoyed strong village support. Thus, given the criteria for promotion and the desire to move up the political ladder, local officials were expected to promote such unpopular policies as the One Child Policy and the collection of agricultural taxes.

The case for the promotion of village officials is more complex. For the period of time under study in this paper (i.e., the early 2000s), some village heads were elected and others were not. The democratically elected village leaders provide a useful "natural experiment" by

which we can see the difference that accountability to villagers or to township leaders makes. Elected village officials should be more responsive to their villager constituents because those are the people to whom they are accountable and on whose support their political future might depend. Indeed, earlier research on village elections in China finds strong evidence showing that village elections lead to more public goods provision, less corruption, and less enforcement of unpopular policies such as the One Child Policy (Martinez-Bravo *et al.*, 2014, 2011). Some even report that even imperfect elections (e.g., rigged by township officials) can still enhance political competition in villages (Brandt & Turner, 2007). The analysis that follows takes advantage of the fact that many village heads were elected and many others were not. This distinction allows for the establishment of a benchmark expectation regarding public goods provision as compared to enforcement of locally unpopular policies that were the criteria for subsequent promotion to higher government.

4 Data and Research Design

4.1 Dataset and Variables

The empirical analysis is based on three waves of Chinese Household Income Project (CHIP) surveys. As a nationally representative dataset of households, seven waves of CHIP data are available for the years 1988, 1995, 1999, 2002, 2007, 2008, and 2013. Among them, only 2002, 2007, and 2008 waves include a village-level dataset in addition to household surveys. Since my aim is to study fiscal dependence of Chinese villages, I make use of these village-level sub-datasets in these three waves of CHIP data.

Since the 2007 and 2008 waves of CHIP data surveyed the same 800 villages, I merge the 2007 wave (containing village data in 2005 and 2007) and 2008 wave (containing village data in 2008) of CHIP data and form a three-year village panel including the years 2005, 2007, and 2008. This panel dataset is the primary data used for empirical tests. Furthermore, I also use the 2002 wave of CHIP data as a robustness check. I have built a two-year panel

for the years 1998 and 2002.³ Across all empirical analysis, I have found that the results are robust in both panel datasets that I constructed.

Furthermore, the CHIP data also contains household-level surveys of the sampled villages. Indeed, in the 2002 wave, the rural household surveys contain rich questions regarding residents' perceptions of rural governance in 2002. This feature of the 2002 wave allows me to further test hypotheses and mechanisms at the household level. The summary statistics of the village and household variables used in this paper are reported in Appendix Table A1.

Across all different waves and levels of data, the major explanatory variable is *fiscal dependence*, measured as the proportion of total revenue in a village in a year that is derived from fiscal transfers.⁴ Hence, *Fiscal Dependence* is a variable that ranges between zero and one, reflecting the extent to which that a village's budget depends on fiscal transfers.

Since I employ a two-way fixed effects model for analysis (see next subsection for details), it is important that Fiscal Dependence must present longitudinal variation in 2005, 2007, and 2008. Although the mean Fiscal Dependence remained quite stable in 2005, 2007, and 2008 (at 0.435, 0.472, and 0.477, respectively), a closer look at the data reveals rich changes in the extent to which villages depended on fiscal transfers. Many villages' Fiscal Dependence increased or dropped dramatically within a year.⁵ For instance, some villages could lose more than half of their fiscal transfers in the next year, while some others may become fully dependent on fiscal transfers for their public finance a year later. Such rich within-village variation (even within two years) in Fiscal Dependence provides the necessary ground for a two-way fixed effects model.

Turning to outcome variables, I use the log of village government spending on public

³Unfortunately, the villages sampled in the 2002 wave are different from those sampled in the 2007 and 2008 waves. Hence, I cannot merge the 2002 wave with the 2007 and 2008 waves.

⁴The measure for fiscal transfers is derived from the CHIP survey question "What is the total amount of any appropriation or transfers from the higher-level government." The total revenue is measured by the survey question "What is the total fiscal revenue for the village government." These two questions are the same in 2007 and 2008 waves. Hence, the measure for fiscal dependence is consistent in 2005, 2007 and 2008.

⁵A possible reason for the dramatic changes of Fiscal Dependence is that most fiscal transfers fund short-term public projects that could be completed within one or two years. When projects are completed, villages must apply for new fiscal transfers for new projects that may or may not be approved.

goods to measure the level of public goods provision in a village, and use the log of village expenditure per official on village officials’ wage and welfare to measure the private goods provided to local elites. Public goods are defined to include such items as spending on agricultural inputs, schools, health, roads, and irrigation, among others.⁶ Moreover, based on my interviews with former village cadres, township governments usually did not provide public goods directly to village residents during 2005-2008.⁷

4.2 Identification Strategy

I use the following estimation form to test Hypotheses 1 and 2:

$$Y_{ipt} = \beta_0 + \beta_1 FD_{ipt} + \alpha X_{ipt} + \gamma_i + \theta_t + \tau_p t + \epsilon_{ipt} \quad (1)$$

where Y_{ipt} is the outcome variable (i.e., public goods provision or spending on officials’ wage and benefits) of village i in province p in year t ; FD_{ipt} is the measure of fiscal dependence of village i ; θ_t is year fixed effects; γ_i captures the village fixed effects; and ϵ_{ipt} is the stochastic error term. Following [Xu & Yao \(2015\)](#) and [Martinez-Bravo *et al.* \(2011, 2014\)](#), I also control for province year trends, $\tau_p t$, which should capture province-specific time shocks such as differences in economic development across provinces and province level decisions on when to implement important reforms in rural China. In addition to the various fixed effects mentioned above, I also include several village-level time-variant control variables (X_{ipt}) to reduce omitted variable bias. All regressions reported in this paper cluster standard errors at the village level to capture serial correlation at the village level.

Furthermore, by adding village fixed effects, the concern for selection bias is much allevi-

⁶The public goods spending that cannot be categorized as these aforementioned goods will still be counted in the “other” category. Hence, the measure for public goods should exhaust all types of spending related to rural public goods and services.

⁷If township or county officials really wanted to provide certain public goods, they usually pushed the mandates to village officials and sometimes matched some fiscal transfers. For example, [Zhou \(2017\)](#) records a case where the township government wanted to build roads to connect villages. This mandate was eventually pushed to village heads. The roads were not built by township government.

ated. The identification strategy employing fixed effects (shown in equation (1)) essentially uses only the within-group variation of fiscal dependence for empirical tests. Then the question is whether within-group variation of fiscal dependence (i.e., change in fiscal dependence within a given village across years) is exogenous to village-specific characteristics.

To answer this question, I conducted interviews with village officials who have worked as village heads between 1998 and 2008.⁸ The purpose of these interviews is not to make causal claims, but rather to provide insight into why fiscal dependence levels change in the same village over time. The interviewees confirmed that in their experience changes in fiscal transfers over time was not driven by idiosyncratic characteristics of their village (e.g., average village income level).⁹ The only exception, as one of my interviewees mentioned, relates to the village's population. Hence, I include a measure for village population as a control variable in all empirical tests.¹⁰

But beyond population size, officials indicated that swings in fiscal transfers were idiosyncratic and that they had little control over how much money they received. According to my interviewees, this is because village officials often did not know the funding priorities of the coming year, making it difficult to them to prepare for the applications for these fiscal transfers. As a result, village officials claimed that fiscal transfers reflected township and county governments' policy priorities, which, as my interviewees claimed, cannot be influenced by village officials directly. Of course, my claims do not have to do primarily with village characteristics but rather with fiscal dependence and personal advancement, a subject interviewees were not likely to address. In fact, my analysis shows that villages could

⁸ The interviews were conducted in December 2018 and January 2019 at villages in Sichuan Province. I relied on my personal connections to select villages and establish initial contact. I then used snowball methods to recruit more interviewees. I have interviewed eight village officials from three villages in total. Although the sample size is small and they do not represent the larger population of Chinese village officials, the purpose of these interviews is not to make any causal claims. Instead, I interviewed these officials to understand fiscal rules and policies in rural China.

⁹ Author's interview with a village party secretary (personal communication, January 15, 2019); author's interview with a village party secretary (personal communication, January 14, 2019); author's interview with a former leader of village production team (personal communication, January 16, 2019); author's interview with a leader of village production team (personal communication, December 27, 2018).

¹⁰ Author's interview with a village party secretary (personal communication, January 14, 2019).

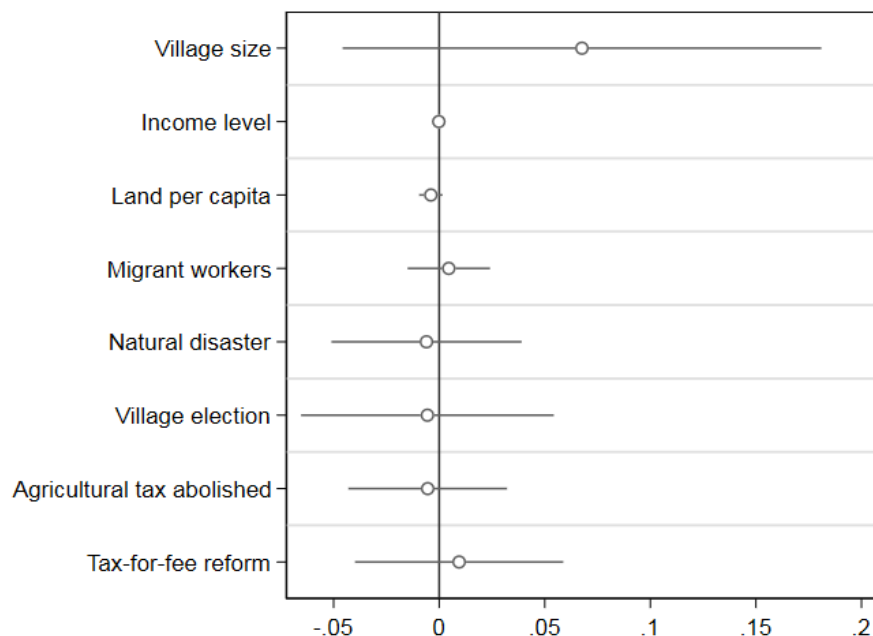


Figure 1: **Correlation between Village Characteristics and Fiscal Dependence in Fixed Effect Model.** This figure shows that village-level variables are not correlated with fiscal dependence level in a fixed effect model. Three years of data from CHIP are used: 2005, 2007, and 2008. Each circle indicates a point estimate and the horizontal bars are the 95% confidence intervals.

potentially swing the allocation of fiscal transfers by enforcing the policies favored by their superiors, though none of my interviewees mentioned this aspect of the story.

Hence, it is important to move beyond these interviews and examine the correlation between fiscal dependence and village characteristics. To this end, I perform quantitative tests on whether village-level variables are associated with fiscal dependence in a fixed effect model. These results are reported in Figure 1.¹¹ As shown in this figure, by using fixed-effect regressions for the three-year panel data for 2005, 2007, and 2008, I find no village-level characteristics, such as income level, land per household, number of migrant workers, or exposure to natural disaster (e.g., flood or earthquake), to be meaningfully correlated with fiscal dependence. Moreover, one may wonder whether major village-level reforms such as village elections, the abolition of agricultural tax, and the tax-for-fee reform, affect fiscal

¹¹Regression results are reported in Appendix Table A2.

dependence, given that earlier studies report that more fiscal transfers are distributed as rebates after these reforms (Yep, 2004). However, from Figure 1 we see that these village-level reforms are not correlated with fiscal dependence either. Furthermore, consistent with my interviews, the only possible endogenous variable seems to be village size (measured by the number of village households); yet, even this variable is not statistically significant. Taken together, these results demonstrate that the longitudinal variations of fiscal dependence is probably exogenous to village characteristics.

Because I cannot find an instrumental variable or a regression discontinuity test, I cannot identify the causal effect of fiscal dependence through an exogenous shock or variation. As a result, my analysis falls prey to the confounding influence of those factors for which I cannot control due to the lack of data. For instance, some may argue that land-taking and the land sales revenue may influence the fiscal transfer size and village public goods provision given the influential role that land-taking and its sales revenue have played in village fiscal politics (Ma *et al.*, 2022). However, the CHIP surveys do not contain data on land sales revenue or other equally important factors for which my analysis must control.

To reduce the concern for these omitted variables, I follow the lead of recent observational studies in political science (e.g., Tajima *et al.* (2018) and Williams (2017)) by testing whether or not the coefficient of fiscal dependence (β_1) is stable even when I consider the potential influence of unobservable confounders based on the method developed by Oster (2017). The basic intuition of this method is that, assuming that the influence of unobservable factors is similar to the influence of the control variables (i.e., X_{ipt}), we can estimate the magnitude of the risk that the coefficients of interest (such as for fiscal dependence in this case) is nullified in light of the relative influence of the omitted variables compared to the control variables (δ). The common wisdom is that a robust result must produce a δ larger than one given the assumption of similar influence for observed and unobserved control variables, meaning that the coefficient(s) of interest are stable when the influence of omitted variable bias is stronger than that of the included control variables. Stable coefficients then mean that the risk is low

that the result of the regression is nullified by omitted variable bias.

5 Main Results

Table 1 contains the baseline results of public goods provision.¹² The outcome variable across all model specifications in Table 1 is the log of village expenditure on public goods. In column (1), I only include the major explanatory variable, fiscal dependence, as well as year and village fixed effects. Then in column (2) I control for province-specific year shocks. Next, in column (3), I further add a group of village control variables: village size (i.e., the number of village households), the average income level, the average agricultural land per household, the number of rural migrant workers who usually live and work in the cities, two major reforms taking place in the late 1990s and early 2000, namely the introduction of competitive village elections and the elimination of agricultural tax, and village revenue size. While I have shown in Figure 1 that most of these control variables are orthogonal to fiscal dependence, by controlling for them I further alleviate such selection bias as more populous or poorer villages are more likely to be fiscally dependent (which is not the case based on Figure 1 in a fixed effect model) and at the same time less likely to provide public goods.

We see that across all specifications in Table 1, the coefficient of fiscal dependence remains negative and statistically significant. Furthermore, the size of influence is not negligible: as fiscal dependence goes up by 1 percentage point, the expenditure of public goods decreases by roughly 1.56 percent based on the preferred, most stringent functional form in column (3). This shows that fiscal dependence on higher-level governments worsens public goods provision in Chinese villages as hypothesized. In the last row of Table 1, I also report the coefficient stability test based on Oster (2017). The intuitive interpretation of this result is that the influence of omitted variable bias is roughly 1.9 times that of included control variables (and the influence should be in the opposite direction of those included control variables) to nullify the negative coefficient of fiscal dependence established in Table 1. The

¹²Full table containing results with control variables is reported in Appendix Table A3.

Table 1: Fiscal dependence and Public Goods Provision

	Public Goods Expenditure		
	(1)	(2)	(3)
Fiscal Dependence	-1.115** (0.442)	-1.122** (0.448)	-1.560*** (0.386)
Year Fixed Effects	✓	✓	✓
Village Fixed Effects	✓	✓	✓
Province-Year Fixed Effects		✓	✓
Village-level Control Variables			✓
Outcome Variable Mean	8.753	8.753	8.747
Observations	2315	2315	2237
Within-group R^2	0.042	0.051	0.240
Villages	795	795	785
δ needed for $\beta_1 = 0$			-1.910

Notes: This table shows that village public goods spending decreases with increased fiscal dependence. Standard errors clustered at the village level are reported in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The last row reports coefficient stability test (Oster, 2017). Following Tajima *et al.* (2018), I have set R_{max} at 2.2 times the within-group R^2 of the controlled regression presented in column (3).

value of δ needed for $\beta_1 = 0$ is safely larger than the commonly used threshold (i.e., $\delta = 1$). This shows that the results should be robust to the potential influence of omitted variable bias.

I have also conducted a series of robustness checks to the results shown in Table 1. First, I show in Appendix Table A4 that the results are robust to alternative measures of the outcome variable such as expenditure on public goods per household or a dummy variable indicating whether the village made any spending on public goods in a year. Next, I have tried additional regression forms which, unlike the fixed effect models in Table 1, also pick up cross-sectional variation. Table A5 presents models that control only for county fixed effects and models with village random effects. These yield similar results. Third, following Xu & Yao (2015), I use the existence of village public projects rather than expenditure data to measure public goods provision. I show these results in Table A6 which shows that fiscal

Table 2: Fiscal dependence and Village Cadres' Wage and Benefits

	Expenditure on Wage per Official		
	(1)	(2)	(3)
Fiscal dependence	1.349*** (0.321)	1.266*** (0.322)	1.057*** (0.304)
Year Fixed Effects	✓	✓	✓
Village Fixed Effects	✓	✓	✓
Province-Year Trends		✓	✓
Baseline Controls			✓
Outcome Variable Mean	6.701	6.701	6.686
Observations	2294	2294	2221
Villages	788	788	779
δ needed for $\beta_1 = 0$			1.991

Notes: This table shows that expenditure on village officials' wage and welfare per official increases with fiscal dependence level. Standard errors clustered at the village level are reported in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. In the last row, I report coefficient stability test based on the method of [Oster \(2017\)](#). Following [Tajima et al. \(2018\)](#), I have set R_{max} at 2.2 times the within-group R^2 of the controlled regression presented in column (3).

dependence is negatively associated with the existence of public projects for roads, schools, and irrigation.

Next, we turn to the results for private goods provision in the village. I argue that because fiscal dependence weakens the village government's responsiveness to residents, village officials are more likely to use public funding to benefit themselves. Hence, we should expect to see that greater fiscal dependence increases the level of official wage and benefits as summarized in Hypothesis 2. I test this conjecture in [Table 2](#). Recall, private goods are measured as the log of the village expenditures per village official on their wages and benefits. The models add variables exactly as in [Table 1](#). Across all these model specifications we see that fiscal dependence is strongly associated with a higher level of village expenditure on the wages and benefits received by the village's officials. I also report the Oster coefficient stability test at the bottom of [Table 2](#) and find that the omitted variable bias is unlikely to nullify the correlation which we have established in [Table 2](#). In [Appendix Table A7](#), I also

use two other forms of outcome variable measures to replicate the results in Table 2 and have obtained similar results. These results lend support to Hypothesis 2.

One major identification assumption of two-way fixed effect models (also known as “generalized difference-in-differences”) is the parallel trends assumption that the treatment group should be similar to control group before the former has received the treatment. By employing a more flexible specification, I have shown In Appendix Table A8 that there are no pre-treatment differences of public goods provision level and spending on officials’ wage and benefits between villages that were later heavily dependent on fiscal transfers (i.e., fiscal dependence above the mean value 0.46) and other villages that had never been heavily dependent on fiscal transfers (i.e., fiscal dependence below 0.46). Yet, once the village became heavily dependent on fiscal transfers, we see a significant drop in public goods provision and an increase in spending on wage and benefits. This test lends further support to the viability of my identification strategy and results reported in this section.

6 Alternative Explanations

In this section, I test some potential alternative explanations for the main results.

Sample selection. Clearly, I have not been able to test the theory in all villages in China. Then one may wonder if the results are only valid in the sample of villages I have studied. Moreover, one may argue that I have not controlled for major confounders such as political connection with higher-level government, the occurrences of natural disasters, and informal institutions in rural China (e.g., clans). First, I should note here that the Oster coefficient stability test shows that omitted variable bias is unlikely to overturn the results. Second, to strengthen the confidence in my results, I replicate the tests with the CHIP 2002 village survey. The CHIP 2002 survey contains a completely different sample of villages in 1998 and 2002. In particular, with the 1998 and 2002 data, I am able to control for three additional important confounders: political connection (measured by whether or not any

village resident worked in the county government), informal institutions (measured by the existence of any traditional organization responsible for traditional weddings and funerals), and natural disaster. I show in Table A9 that the results are robust to the inclusion of these additional control variables by using the panel dataset of 1998 and 2002.

Data misrepresentation. One may question the results by arguing that CHIP village data were mostly reported by village cadres and they could misreport the data about public goods provision. To rule out this potential bias caused by prospective measurement error, I make use of the household survey in the 2002 wave of CHIP data, where data collection teams directly surveyed roughly 9100 households from 450 villages in 2002. In these household surveys, village residents were asked about their level of satisfaction with regard to several public services provided by the village government. These subjective assessment should be less likely to be misreported due to official manipulation. I show in Table A10 that, consistent with results in Table 1, fiscal dependence reduced village residents' satisfaction with regard to primary education, middle school education, and village clinic service provided by the village government.

Reverse causality. One may consider that the results are driven by reverse causality. Perhaps villages with lower public goods provision and more private goods to village officials were more likely to become fiscally dependent on transfers from township government. In Appendix Table A11, I test the reverse causality logic by examining if public goods provision and spending on officials' wage and benefits in the previous year (i.e., lagged by one year) significantly influence fiscal dependence in the following year. There are no significant correlations between these lagged spending level and subsequent fiscal dependence. Of course, I cannot fully exclude the possibility of reverse causality, but the tests in the appendix certainly do not provide evidence to support it.

Competent officials. Another alternative explanation for the results that officials' wage and benefits are higher in fiscally dependent villages is that those villages hired more competent officials who commanded a higher wage. In fact, previous research shows em-

pirically that those village officials who have received higher wages would contribute more efforts to village affairs and public services (Kung *et al.* , 2009). To test this argument, I use the household-level survey in 2002, where households were asked about their perception of village officials' competence and efforts. I show these results in Table A12. I have used three variables to measure residents' satisfaction with the effort by village officials to deal with pressing governance issues in Chinese villages in the early 2000s. Across all tests, I have found that fiscal dependence is negatively associated with residents' satisfaction level. In other words, if anything, fiscally dependent villages have spent more on officials' wage and benefits, but residents did not think that these officials were competent or hardworking, contradicting the alternative account.

7 Mechanism

In section 5, I have shown that fiscal dependence leads to less public goods provision to village residents and more private goods to village officials. I argued that there are two mechanisms behind this finding: fiscal dependence makes people less active in holding officials accountable and local officials more responsive to higher-level government. I will show several straightforward tests of these two mechanisms in this section.

7.1 Fiscal Dependence and Political Engagement

One plausible reason for diminished village government responsiveness to the interests of residents when there is high fiscal dependence is that residents, not being heavily taxed by the village, make less effort to holding officials accountable than is true in low fiscal dependence villages. To test this argument, I make use of the household survey data of the 2002 wave of CHIP data. In particular, I use three variables to measure the engagement of villagers in village governance: (a) how many times in 2002 (log form) the resident checked the village news board where the village government posts government policies and village government

Table 3: Fiscal Dependence Weakens Citizen Oversight

	News Board		Civic Meetings		Election	
	(1)	(2)	(3)	(4)	(5)	(6)
Fiscal dependence	-0.142*** (0.045)	-0.122*** (0.046)	-0.148** (0.070)	-0.115* (0.070)	-0.144* (0.079)	-0.131* (0.078)
Number of HH Members		-0.009 (0.008)		-0.002 (0.013)		0.004 (0.013)
Largest Clan		-0.005 (0.023)		-0.037 (0.034)		-0.004 (0.040)
HH Net Income		0.075*** (0.018)		0.150*** (0.026)		0.042* (0.025)
Model HH		0.208*** (0.047)		0.463*** (0.065)		0.242*** (0.067)
Political Connection		0.060*** (0.022)		0.183*** (0.033)		0.066* (0.036)
Outcome Variable Mean	0.651	0.651	1.275	1.275	3.190	3.190
Observations	6759	6754	7166	7159	8308	8298
Villages	444	444	451	451	452	452

Notes: This table shows that residents in fiscally dependent villages were less likely to participate in or care about village governance. Standard errors clustered at the village level are reported in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. “HH” = household.

decisions (“News Board” in Table 3); (b) how many times did residents participate in village meetings (log form) in 2002 (“Civic Meetings” in Table 3); and (c) to what extent did villager’s believe that village elections were important, measured as a categorical variable ranging from zero to four (“Election” in Table 3).¹³

With these new variables, Table 3 shows that residents in fiscally dependent villages were less likely to participate in or care about village governance. These results remain robust when I control for household size, whether the respondent was from the largest clan in the villages, household net income, whether the household was selected by the village government as a model household (a proxy for the relationship between the household and village government), and whether any family member of the household worked in the county government

¹³I code residents’ perception towards the importance of elections by a categorical variable where “very important” is coded as 4, “important” is coded as 3, “just so-so” is coded as 2, “not important” is coded as 1, “very unimportant” is coded as 0, and “not sure” is coded as missing.

(a proxy for political connections). I interpret the deteriorating democratic participation and civic engagement in fiscally dependent villages as indicating that residents were disappointed by the governance process in the village, and quite likely, their participation and engagement rarely received any meaningful response from village officials.

As another test for whether the dependence on fiscal transfers diminishes people’s political engagement, I show that village funding that institutionally required the consent of the villagers (and hence their political engagement) did not decrease public goods provision and did not increase private goods provision to village officials. One such village revenue source is the “One Project One Decision (OPOD)” funding. Although both OPOD funding and fiscal transfers are mainly used to provide public goods, the crucial difference is how the funding is raised.¹⁴ OPOD funding depends on the direct financial contribution of villagers to the village’s budget when the village requires funding for public construction projects, such as when road and irrigation systems need construction. Because villagers (rather than village officials) directly decide how much money to raise and where to spend the OPOD funding, OPOD revenue is more likely to be used on public goods provision. The transparency of the OPOD funding also makes rent-seeking activities less likely. Hence, if my argument that fiscal dependence reduces villagers’ incentives to hold village officials accountable really drives the main findings in this paper, we should find that villages dependent on OPOD funding for government revenue should provide more public goods and spend less on officials’ wage and benefits in contrast to villages that were fiscally dependent.

I show these results in Table 4. To facilitate comparison, I show the results of fiscal dependence again in columns (3) and (6). In columns (1) and (4), we see that villages more dependent on OPOD funding (measured by the share of village revenue from OPOD funding) have spent more on public goods and less on officials’ wage and benefits, albeit the latter effect is not statistically significant. Both effects are starkly different from those in

¹⁴Based on my interviews, the reason why some projects are financed by fiscal transfers and others are financed by OPOD funding is mainly because township and county governments set clear objectives for which public projects should receive fiscal support. OPOD funding is often used to fund those projects not supported by fiscal transfer programs.

Table 4: Different Sources of Revenue, Public Goods Provision, and Elite Capture

	PG Expenditure			Wage and Benefits Expenditure		
	(1)	(2)	(3)	(4)	(5)	(6)
OPOD share	2.320*** (0.595)			-0.560 (0.515)		
Firm revenue share		0.283 (0.440)			-0.392 (0.390)	
Fiscal dependence			-1.560*** (0.386)			1.057*** (0.304)
Year Fixed Effects	✓	✓	✓	✓	✓	✓
Village Fixed Effects	✓	✓	✓	✓	✓	✓
Province-Year Trends	✓	✓	✓	✓	✓	✓
Baseline controls	✓	✓	✓	✓	✓	✓
Outcome Variable Mean	8.803	8.829	8.747	6.657	6.687	6.686
Observations	2152	2163	2237	2136	2147	2221
Villages	784	785	785	778	779	779

Notes: This table shows that the pattern of fiscal dependence cannot be found in other sources of revenue dependence (i.e., dependence on revenue from village-owned firms or on village residents' direct financial contribution to public projects, OPOD funding). Standard errors clustered at the village level are reported in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

columns (3) and (6), showing that responsiveness to local villagers really matters in village expenditure allocation.

As another comparison group, I have tested if village's dependence on revenue from village-owned firms and other village government's economic activities (e.g., leasing out an equipment to villagers) for government revenue (labelled as "firm revenue share" in Table 4) could affect public goods provision and expenditure on officials' wage and benefits. "Firm revenue" is not guaranteed to be used on public goods items since village officials have the ultimate say on how to use it. However, the use of "firm revenue" still faces villager supervision. For instance, many villagers (in some cases, all villagers) are stock shareholders of village-owned firms who will eventually have a voice on how to use the firm revenue. In other words, villagers have some control over how to use "firm revenue", although this

control is by no means as strong as that of OPOD funding.¹⁵ Hence, in Table 4, we see that firm revenue share does not have a significant influence on either public goods provision or spending on officials' wage and benefits. The results of firm revenue share also alleviate the concern that the dependence on OPOD funding promotes public goods provision only because the OPOD share is negatively correlated with fiscal dependence (correlation coefficient = -0.25). However, the negative correlation between firm revenue share and fiscal dependence is even stronger (correlation coefficient = -0.38), but we have not seen that the effect of firm revenue share is significant in columns (2) and (5).

7.2 Elections and Fiscal Dependence

As another piece of evidence for the compromised responsiveness to villagers, I show that the pernicious effects of fiscal dependence on public goods provision is muted in villages where residents held elections to select their village head. In 1998, the central government required that all villages select their village head through competitive elections.¹⁶ However, local governments controlled the ways and pace of implementing this policy. In the CHIP 2002 data set, 21 percent of villages in 1998 and 14 percent in 2002 did not hold elections to select their village heads. This variation in implementing village elections sets up a basis for testing if village elections could mitigate the effects of fiscal dependency on public goods provision. Moreover, as [Martinez-Bravo *et al.* \(2011, 2014\)](#) argued and formally tested, the introduction of village elections in China was not controlled by villages. Instead, when and where to have elections were mostly determined by higher-level governments. Hence, similar to [Martinez-Bravo *et al.* \(2011, 2014\)](#), I treat the introduction of village elections as

¹⁵Some scholars of Chinese politics have pointed out that profits from village-owned firms were indeed mostly spent on investment in production and public service provision. For instance, [Oi \(1992\)](#) has reported that “[r]evenue from rural collective enterprises has been the sources of funds for public services, welfare, and subsidies to other, less profitable, sectors of the economy, such as agriculture, in addition to servicing as the base for industrial expansion” (p.116).

¹⁶The revised version of the *Organizational Law of Village Committee* passed by the National People's Congress in 1998 required all villages in China to select their village heads through elections.

Table 5: Fiscal Dependence, Election, and Public Goods Provision

	Public goods provision	
	(1)	(2)
Fiscal dependence	-1.699** (0.754)	-1.725** (0.757)
Election	0.135 (0.294)	0.108 (0.313)
Fiscal dependence \times Election	1.280 (0.797)	1.073 (0.804)
Year fixed effect	✓	✓
Village fixed effect	✓	✓
Province year trend	✓	✓
Village controls		✓
Observations	1520	1449
Villages	845	811
F-test:		
Fiscal dependence + Fiscal dependence \times Election [P-values in brackets]	-0.419 [0.356]	-0.652 [0.164]

Notes: This table shows that the dependence of fiscal transfers did not cause a negative impact on public goods provision in villages holding elections. Standard errors clustered at the village level are reported in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

a quasi-exogenous shock.¹⁷ I test if these externally introduced elections could mitigate the pernicious effects of fiscal dependence on public goods provision.

I test this conjecture with the CHIP 2002 data of two years of data in 1998 and 2002. The results are reported in Table 5. Besides fiscal dependence, the other major independent variable is Election, a binary variable indicating if the village held a competitive primary election before the general election and villagers could freely nominate candidates as required by the central government. To measure the difference of treatment effects of fiscal dependence between villages holding and not holding elections, I interact Election with fiscal dependence and test if the influence of fiscal dependence on public goods provision was the same among

¹⁷Admittedly, local governments might put off the implementation of village elections in “problematic” or “noncooperative” villages. However, such villages should not be large in number and, empirically, [Martinez-Bravo et al. \(2011, 2014\)](#) have found that the timing of introducing election was almost the same in villages of the same county. Readers interested in understanding the quasi-exogenous setting of village elections may refer to [Martinez-Bravo et al. \(2011, 2014\)](#) for further details.

villages holding elections and those not holding elections.

As reported in Table 5, the coefficient of fiscal dependence continues to be negative and statistically significant, showing that fiscal dependence’s influence on public goods provision in villages not holding elections is negative. However, the sum of the effects of fiscal dependence and the interaction term between fiscal dependence and election (reported at the bottom of Table 5) shows that in villages that held elections the null hypothesis is supported. That is, fiscal dependence does not influence public goods provision in villages with elections, contrary to the pernicious effect experienced in villages that did not hold elections and were fiscally dependent. Thus we see that dependence on a specific revenue source does not diminish public goods provision if determinations of how to use funding or who administers funding is determined democratically. The results in Table 5 indicate that such “democratic” institutional arrangements as village elections help village residents avoid pernicious influences of fiscal dependence.

7.3 Responsiveness to the Higher-level Government

Next, I show that fiscal dependence makes village governments more answerable to township officials. More specifically, I measure township government’s attempt to strengthen village governance by the introduction of more fiscal oversight. In the early 2000s, many township governments in China tried to introduce more transparency to budget management in village government. They did so because village budgets were widely misused, with money embezzled by village cadres.¹⁸ One such attempt was the reform that the township government would oversee village governments’ bank accounts (“township fiscal oversight” hereafter). Of course, how to use the village budget was still determined by the village government, but putting the bank accounts in the township government’s hands made it costlier for village officials to use public money for personal benefit. If higher-level governments were interested in using fiscal dependence to introduce more stringent fiscal standards in village governments,

¹⁸Indeed, the corruption of village officials was widely reported in Chinese social media, indicating that it was fairly common that village officials misused village funds to benefit themselves (Qin *et al.* , 2017).

we would see that fiscally dependent villages were more likely to adopt township fiscal oversight. However, as shown in the first two columns of Table 6, I have not found any significant association between fiscal dependence and enforcement of township fiscal oversight.

Table 6: Fiscal Dependence Increases Responsiveness to Above

	Fiscal Oversight		Extra-Kids Fine Size		Agricultural Tax	
	(1) Village	(2) Village	(3) Village	(4) Village	(5) HH	(6) HH
Fiscal dependence	-0.016 (0.028)	-0.024 (0.026)	1.027* (0.594)	1.452** (0.712)	0.683*** (0.201)	0.433** (0.216)
Year Fixed Effects	✓	✓	✓	✓		
Village Fixed Effects	✓	✓	✓	✓		
Province-Year Trends		✓		✓		
Village Controls		✓		✓		✓
Household Controls						✓
Years of Data	2005 2007 2008	2005 2007 2008	1998 2002	1998 2002	2002	2002
Outcome Variable Mean	0.813	0.816	2.993	3.112	4.113	4.105
Observations	2324	2246	1316	1244	8636	8346
Villages	785	795	793	754	452	437

Notes: This table shows that villages that were more fiscally dependent were not more likely to establish direct fiscal oversight by the township government, but collected more extra-kids fines and agricultural taxes from villagers. Standard errors clustered at the village level are reported in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. “HH” = households.

While higher-level governments were not interested in establishing more stringent fiscal standards in villages, this does not mean that they did not use fiscal dependence to hold village governments accountable for other policy concerns. In particular, township government may ask fiscally dependent villages to help them implement unpopular policies that can help township leaders get promoted. Such policies include maintaining social stability, collecting agricultural tax from villagers, and enforcing the One Child Policy.¹⁹ As noted earlier, if township officials failed to deliver these policies, they would not even be considered

¹⁹Agricultural tax was abolished by the central government in 2006 and the One Child Policy was loosened in 2013. However, the enforcement of these policies were important in rural China in the early 2000s.

for promotion. Therefore, township officials had a strong incentive to ask fiscally dependent villages to help them achieve these policy outcomes.

In columns (3) to (6) of Table 6, I show that fiscally dependent villages were indeed more active in enforcing the One Child Policy and collecting agricultural tax. I measure the enforcement of the One Child Policy by the log of the total amount of fines for having extra-kids that were collected by the village government from families having more kids than the legal quota required in the early 2000s. To ensure that the results do not depend on the measurement form of the outcome variable, in Appendix Table A13 I also use whether the village collected any extra-kids fines and the total extra-kids fines per household as alternative measures. Across all these results and in particular in columns (3) and (4) of Table 6, fiscally dependent villages collected a larger amount of extra-kids fines in 1998 and 2002.²⁰ This shows that villages were more serious in enforcing the One Child Policy. However, one may doubt if this also signalled that there were in fact more households breaking the One Child Policy, showing that fiscally dependent villages did not work hard on enforcing the One Child Policy. To rule out this alternative explanation, in Appendix Table A14, I show that villages recognized by township government as better enforcers of the One Child Policy (i.e., political model villages) indeed collected a larger amount of extra-kids fines. This shows that the measure for the enforcement of the One Child Policy is valid.

Finally, I test in columns (5) and (6) whether fiscally dependent villages collected more agricultural tax from villagers. Note that in the early 2000s (but before 2006 when the agricultural tax was abolished), village and township governments were faced with a difficult time collecting the agricultural tax. The central government required that local governments shall not collect agricultural tax by force in fear that peasants would become too angry at the regime and organize large-scale protests. Hence, the collection of agricultural tax in early 2000s was more like a bargain between officials and peasants. The tax rate set by the central government did not reflect the real amount of agricultural tax village and township

²⁰Following Mattingly (2020), I also control for the number of officials per household in column (4).

officials could collect from villagers. That amount depended more on the tactics and efforts made by village officials to persuade villagers to pay their taxes.

I argue that villages dependent on fiscal transfers would work harder to collect agricultural tax so as to fulfill the policy priority of the township government. I test this argument with the household-level data from 2002. The dependent variable is the log of the total agricultural tax the household paid to the village. In column (5), I only include fiscal dependence as the explanatory variable and have found that households in fiscally dependent villages paid more agricultural tax in 2002 than those with less fiscal dependence. In column (6), I further control for the baseline village covariates used in Table 1 and household covariates used in Table 3. With these control variables, I am able to exclude the influence of household income, the importance of agricultural production in the village, and political connections, to name a few concerns. And in column (6), I still find the coefficient of fiscal dependence to be positive and statistically significant.

8 Conclusion

Earlier research in distributive politics has demonstrated that fiscal transfers can breed corruption, favoritism, resource waste, and so on because of various forms of “electoral capture” (Golden & Min, 2013). In this paper, I have focused on an understudied aspect of fiscal transfers; namely, that they create a form of fiscal dependence on higher-level government which fundamentally changes the local responsiveness mechanism. These changes can even operate without an electoral system.

Even though township officials faced no electoral pressure to target transfers on swing voters or co-partisans, the dependence on fiscal transfers diminished the public goods provision and promoted elite capture in Chinese villages. Mechanisms behind these findings are (a) officials in villages with a high level of dependence on transfers became less responsive to villagers because villagers had weaker motivation to participate in village affairs and

governance; and (b) fiscal dependence further distracted village officials' attention to favor township officials' policy preferences (e.g., the enforcement of the One Child Policy and the collection of agricultural tax) at the cost of villagers.

Unlike fiscal transfers, I have demonstrated that the dependence on “one project on decision (OPOD)” funds, which are contributed and decided by villagers, is associated with more public goods provision and less rent-seeking activities of village officials. Similarly, in villages holding elections, the negative influence of dependence on transfers disappears. These results show that the dependence on certain revenue does not necessarily lead to less government responsiveness to people. Rather, how the revenue is collected, decided, and managed matters. If the government revenue requires people's consent and oversight (i.e., OPOD funds) or the people managing government revenue are faced with stronger electoral accountability (i.e., villages holding elections), we should see that the dependence on certain fiscal revenue is less likely to create a non-responsive government.

Taken together, these results provide novel evidence on how distributive politics works in settings that lack electoral incentives. Even in authoritarian settings, a primary account for distributive politics is still the dictator's incentives to demonstrate his invincibility by obtaining more votes (Magaloni, 2006). My analysis departs from this line of research that centers on politicians' electoral incentives usually in the national government. My findings demonstrate that the bureaucratic incentives of local officials could explain the sways of the allocation of fiscal resources in China where electoral incentives do not exist (at least for township and county officials).

When winning votes from voters is no longer the most pressing task for politicians, they distribute public resources to please their superiors that can affect their political career or squander fiscal resources to raise their wages and benefits. Interestingly, although the incentives to obtain more votes may sometimes distort the allocation of public resources in democracies, I show that democratic institutions could ameliorate the politically-driven fiscal transfers in China. Further research is needed to understand whether similar patterns

could be obtained in other settings too.

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Online Appendix for
*Public Finance, Public Goods Provision, and Govern-
ment Responsiveness: Evidence from Rural China*

Contents of Online Appendix

A1	Summary Statistics	39
A2	What Factors Affected Fiscal Dependence?	40
A3	Fiscal dependence and Public Goods Provision (with all Control Variables)	41
A4	Fiscal dependence and Public Goods Provision: Alternative Outcome Measures	42
A5	Fiscal dependence and Public Goods Provision: Alternative Functional Forms	43
A6	Fiscal dependence and Public Goods Provision: Public Projects	44
A7	Fiscal dependence and Village Cadres' Wage: Alternative Outcome Measures	45
A8	Testing Parallel Trends Assumption	46
A9	Fiscal dependence and Public Goods Provision: 2002 CHIP Survey	47
A10	Fiscal dependence and Public Goods Provision: Household Survey	48
A11	Testing Reverse Causality with Lagged Data	49
A12	Village Residents' Perception over Village Government	50
A13	Fiscal dependence and the One Child Policy: Alternative Outcome Measures	51
A14	Political Model Villages and the Collection of Extra-Kids Fines	52

Table A1: Summary Statistics

	Obs	Mean	SD
Village-level variables:			
Fiscal dependence	2,324	0.46	0.36
OPOD share	2,222	0.09	0.21
Firm revenue share	2,241	0.14	0.26
Public goods expenditure (log)	2,341	8.74	4.58
Expenditure on officials' wage and benefits per official (log)	2,329	6.68	3.11
Number of households (log)	2,346	6.32	0.63
Income level (per day)	2,397	39.89	15.01
Total revenue of the village government (log)	2,349	11.29	2.19
Agricultural land area per household (log)	2,310	6.26	4.91
Number of rural migrant workers (log)	2,391	5.64	1.17
Village election	2,394	0.70	0.46
Elimination of agricultural tax	2,385	0.83	0.38
Township fiscal oversight over village	2,394	0.81	0.39
Household-level variables:			
Number of times checking village news board per year	7,146	0.65	0.57
Number of times attending civic meetings per year	7,627	1.28	0.94
How important village elections are to you?	8,848	3.19	1.10
The amount of agricultural tax paid (log)	9,200	4.12	2.28

Table A2: What Factors Affected Fiscal Dependence?

	Fiscal dependence							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Village size	0.068 (0.058)							
Income level		-0.000 (0.001)						
Land per household			-0.004 (0.003)					
Rural migrant workers				0.005 (0.010)				
Natural disaster					-0.006 (0.023)			
Village election						-0.006 (0.030)		
Abolition of agricultural tax							-0.005 (0.019)	
Tax-for-fee reform								0.009 (0.025)
Year FE	✓	✓	✓	✓	✓	✓	✓	✓
Village FE	✓	✓	✓	✓	✓	✓	✓	✓
Observations	2286	2324	2254	2318	1559	2324	2315	2301
Villages	795	795	789	793	795	795	792	786

Notes: This table reports the correlation between fiscal dependence and several potential determinants of fiscal dependence with three years of data in 2005, 2007, and 2008. Natural disaster variable is not available in 2005, so only two years of data (i.e., 2007 and 2008) have been used. Standard errors clustered at the village level are reported in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A3: Fiscal dependence and Public Goods Provision (with all Control Variables)

	Public Goods Expenditure		
	(1)	(2)	(3)
Fiscal Dependence	-1.115** (0.442)	-1.122** (0.448)	-1.560*** (0.386)
Village Size			0.891 (0.697)
Income Level			0.010 (0.008)
Land per capita			0.015 (0.021)
Rural Migrant Workers			0.119 (0.136)
Election			0.277 (0.303)
Tax Abolition			0.221 (0.222)
Fiscal Revenue			1.077*** (0.077)
Year Fixed Effects	✓	✓	✓
Village Fixed Effects	✓	✓	✓
Province-Year Trends		✓	✓
Village-level Control Variables			✓
Outcome Variable Mean	8.753	8.753	8.747
Observations	2315	2315	2237
Within-group R^2	0.042	0.051	0.240
Villages	795	795	785
δ needed for $\beta_1 = 0$			-1.910

Notes: This table shows that village public goods spending decreases with increased fiscal dependence. Standard errors clustered at the village level are reported in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. In the last row, I report coefficient stability test based on the method of Oster (2017). Following Tajima *et al.* (2018), I have set R_{max} at 2.2 times the within-group R^2 of the controlled regression presented in column (3).

Table A4: Fiscal dependence and Public Goods Provision: Alternative Outcome Measures

	PG Expenditure Per HH		Any PG Expenditure	
	(1)	(2)	(3)	(4)
Fiscal dependence	-0.507** (0.209)	-0.732*** (0.173)	-0.107** (0.042)	-0.136*** (0.040)
Village Size		-0.278 (0.274)		0.077 (0.068)
Income Level		0.005 (0.004)		0.001 (0.001)
Fiscal Revenue		0.657*** (0.052)		0.065*** (0.008)
Land per capita		0.007 (0.011)		0.001 (0.002)
Rural Migrant Workers		0.056 (0.058)		0.010 (0.015)
Election		0.173 (0.155)		0.017 (0.031)
Tax Abolishment		0.096 (0.098)		0.017 (0.023)
Year Fixed Effects	✓	✓	✓	✓
Village Fixed Effects	✓	✓	✓	✓
Province-Year Trends		✓		✓
Outcome Variable Mean	3.650	3.816	0.809	0.829
Observations	2277	2237	2315	2237
Villages	795	785	795	785

Notes: This table shows that by using other two different measures of public goods provision, village public goods spending decreases with fiscal dependence. Standard errors clustered at the village level are reported in parentheses. Standard errors clustered at the village level are reported in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A5: Fiscal dependence and Public Goods Provision: Alternative Functional Forms

	Public Goods Expenditure (Log Form)			
	(1)	(2)	(3)	(4)
Fiscal dependence	-2.370*** (0.340)	-1.980*** (0.292)	-2.798*** (0.342)	-2.276*** (0.288)
Village Size		-0.041 (0.216)		0.145 (0.211)
Income Level		0.011 (0.008)		0.008 (0.007)
Fiscal Revenue		1.173*** (0.076)		1.165*** (0.061)
Land per capita		0.033 (0.024)		0.014 (0.017)
Rural Migrant Workers		0.101 (0.103)		0.115 (0.092)
Election		-0.109 (0.211)		0.237 (0.197)
Tax Abolishment		0.135 (0.266)		0.269 (0.225)
Year Fixed Effects	✓	✓	✓	✓
Village Random Effects			✓	✓
County Fixed Effects	✓	✓		
Province-Year Trends		✓		✓
Outcome Variable Mean	8.753	8.747	8.753	8.747
Observations	2315	2237	2315	2237
Villages	795	785	795	785

Notes: This table shows that by using other two different model specifications (county fixed effects or village random effects), village public goods spending decreases with fiscal dependence. Standard errors clustered at the village level are reported in parentheses. Standard errors clustered at the village level are reported in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A6: Fiscal dependence and Public Goods Provision: Public Projects

	Road		Irrigation		School	
	(1)	(2)	(3)	(4)	(5)	(6)
Fiscal dependence	-0.120** (0.054)	-0.114** (0.052)	-0.042 (0.049)	-0.018 (0.049)	-0.037 (0.044)	-0.010 (0.043)
Village Size		-0.031 (0.080)		-0.130** (0.061)		0.010 (0.065)
Income Level		0.002* (0.001)		-0.001 (0.001)		0.002 (0.001)
Fiscal Revenue		0.040*** (0.012)		0.023** (0.010)		0.005 (0.008)
Land per capita		0.003 (0.003)		0.002 (0.003)		0.000 (0.002)
Rural Migrant Workers		0.025 (0.019)		0.035* (0.020)		0.010 (0.016)
Election		0.075 (0.063)		-0.076 (0.052)		-0.034 (0.045)
Tax Abolishment		-0.022 (0.044)		0.038 (0.037)		-0.023 (0.032)
Year Fixed Effects	✓	✓	✓	✓	✓	✓
Village Fixed Effects	✓	✓	✓	✓	✓	✓
Province-Year Trends		✓		✓		✓
Outcome Variable Mean	0.589	0.592	0.479	0.483	0.270	0.269
Observations	2307	2231	2300	2225	2292	2218
Villages	795	785	795	784	795	784

Notes: This table shows that fiscal dependence decreases the chances to have public projects in a villages. Standard errors clustered at the village level are reported in parentheses. Standard errors clustered at the village level are reported in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A7: Fiscal dependence and Village Cadres' Wage: Alternative Outcome Measures

	Total Wage Expenditure		Wage Expenditure per HH	
	(1)	(2)	(3)	(4)
Fiscal dependence	0.401*** (0.097)	0.324*** (0.093)	0.572*** (0.153)	0.480*** (0.146)
Year Fixed Effects	✓	✓	✓	✓
Village Fixed Effects	✓	✓	✓	✓
Province-Year Trends		✓		✓
Baseline Controls		✓		✓
Outcome Variable Mean	2.030	2.027	3.293	3.287
Observations	2315	2237	2277	2237
Villages	788	779	788	779

Notes: This table provides additional evidence to support our claim that fiscal dependence increases the village expenditure on officials' wage and welfare by using another two measures of the outcome variable. Standard errors clustered at the village level are reported in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A8: Testing Parallel Trends Assumption

	Public Goods		Wage and Benefits	
	(1)	(2)	(3)	(4)
2 years before fiscal dependence > 0.46	0.616 (0.616)	0.231 (0.548)	0.205 (0.130)	0.208 (0.127)
1 year before fiscal dependence > 0.46	-0.033 (0.538)	-0.310 (0.495)	0.148 (0.110)	0.159 (0.107)
Fiscal dependence > 0.46	-0.390 (0.401)	-0.750** (0.359)	0.281*** (0.089)	0.265*** (0.085)
Village Size		0.915 (0.720)		0.237 (0.163)
Income Level		0.009 (0.008)		-0.002 (0.002)
Land per capita		0.019 (0.021)		0.004 (0.006)
Rural Migrant Workers		0.118 (0.136)		-0.052** (0.026)
Election		0.254 (0.308)		0.122 (0.077)
Tax Abolishment		0.228 (0.223)		0.157*** (0.045)
Fiscal Revenue		1.058*** (0.079)		0.118*** (0.017)
Constant	8.219*** (0.287)	-10.311** (4.547)	1.821*** (0.061)	-0.824 (1.002)
Year Fixed Effects	✓	✓	✓	✓
Village Fixed Effects	✓	✓	✓	✓
Province-Year Trends	✓	✓	✓	✓
Observations	2315	2237	2315	2237
Villages	795	785	795	785

Notes: This table shows that for villages that later became dependent on fiscal transfers (fiscal dependence > 0.46), before they became so, their spending on public goods and officials' wage and benefits had been similar to other villages which never heavily depended on fiscal transfers (i.e., fiscal dependence < 0.46). Standard errors clustered at the village level are reported in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A9: Fiscal dependence and Public Goods Provision: 2002 CHIP Survey

	Public Goods Expenditure (Log Form)			
	(1)	(2)	(3)	(4)
Fiscal dependence	-0.566 (0.411)	-0.907** (0.431)	-0.832* (0.432)	-0.881** (0.435)
Village Size		0.245 (0.451)	-0.028 (0.446)	-0.082 (0.462)
Income Level		0.784* (0.461)	0.792 (0.506)	0.583 (0.470)
Fiscal Revenue		0.239** (0.101)	0.203** (0.101)	0.180* (0.105)
Land per capita		-0.161 (0.188)	-0.199 (0.197)	-0.247 (0.213)
Rural Migrant Workers		2.783 (3.037)	2.811 (3.025)	1.767 (3.160)
Election		0.141 (0.277)	0.185 (0.275)	0.257 (0.286)
Tax-for-Fee Reform		0.236 (0.278)	0.291 (0.281)	0.468 (0.494)
Political Connection			-0.388 (0.552)	-0.308 (0.494)
Traditional Organization			0.102 (0.909)	0.258 (0.918)
Disaster			0.667*** (0.199)	0.618*** (0.206)
Year Fixed Effects	✓	✓	✓	✓
Village Fixed Effects	✓	✓	✓	✓
Province-Year Trends				✓
Outcome Variable Mean	8.143	8.102	8.122	8.122
Observations	1520	1467	1449	1449
Villages	845	820	811	811

Notes: This table shows that fiscal dependence decreases the level of public goods provision by using the CHIP 2002 survey, which contains the data set of 961 villages in years 1998 and 2002. Standard errors clustered at the village level are reported in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A10: Fiscal dependence and Public Goods Provision: Household Survey

	Primary School		Middle School		Village Clinic	
	(1)	(2)	(3)	(4)	(5)	(6)
Fiscal dependence	-0.243*** (0.078)	-0.208*** (0.078)	-0.209*** (0.075)	-0.178** (0.076)	-0.161** (0.077)	-0.143* (0.079)
Number of HH Members		-0.014 (0.013)		0.000 (0.012)		-0.022* (0.012)
Largest Clan		-0.054 (0.039)		0.003 (0.039)		0.034 (0.038)
HH Net Income		0.098*** (0.028)		0.082*** (0.027)		0.037 (0.026)
Model HH		0.257*** (0.074)		0.210*** (0.068)		0.165*** (0.058)
Political Connection		-0.042 (0.037)		-0.029 (0.038)		0.037 (0.035)
Outcome Variable Mean	2.380	2.380	2.363	2.363	2.365	2.366
Observations	7879	7871	7445	7437	8272	8262
Villages	450	450	449	449	450	450

Notes: This set of resident-level analysis is based on the 2002 CHIP survey. Outcome variables are the satisfaction level of sampled households in a village towards the public service provided by the village government. I code the satisfaction levels by categorical variables where “very satisfied” is coded as 4, “satisfied” is coded as 3, “just so-so” is coded as 2, “not satisfied” is coded as 1, “very unsatisfied” is coded as 0, and “not sure” is coded as missing. I analyze three public services which village governments in China were directly (i.e., primary education and village clinic) or indirectly (i.e., middle school) responsible for. I have found that residents in villagers with a higher level of fiscal dependence were less likely to report satisfaction with these public services in 2002. Standard errors clustered at the village level are reported in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A11: Testing Reverse Causality with Lagged Data

	Fiscal dependence		
	(1)	(2)	(3)
PG Spending (lagged)	0.005 (0.005)		0.005 (0.005)
Wage Spending (lagged)		-0.006 (0.012)	-0.008 (0.012)
Year Fixed Effects	✓	✓	✓
Village Fixed Effects	✓	✓	✓
Outcome Variable Mean	0.474	0.476	0.475
Observations	1530	1523	1519
Villages	779	777	773

Notes: This table shows that public goods spending (log form) and spending on village officials' wage and benefits in the previous year are not associated with the fiscal dependence level in this year. Standard errors clustered at the village level are reported in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A12: Village Residents' Perception over Village Government

	Income Growth		Spokesperson		Mediation	
	(1)	(2)	(3)	(4)	(5)	(6)
Fiscal dependence	-0.235** (0.092)	-0.213** (0.092)	-0.228*** (0.080)	-0.196** (0.081)	-0.202*** (0.068)	-0.182*** (0.069)
Number of HH Members		-0.018 (0.015)		-0.025* (0.014)		-0.020 (0.012)
Largest Clan		-0.033 (0.048)		0.029 (0.041)		0.025 (0.038)
HH Net Income		0.057* (0.029)		0.086*** (0.027)		0.058** (0.024)
Model HH		0.429*** (0.075)		0.294*** (0.074)		0.272*** (0.063)
Political Connection		0.085* (0.045)		0.122*** (0.039)		0.125*** (0.035)
Outcome Variable Mean	2.309	2.309	2.578	2.578	2.688	2.689
Observations	7992	7983	8089	8079	8055	8045
Villages	452	452	452	452	452	452

Notes: This table provides additional evidence at the resident level that officials at fiscally dependent villages were less responsive to residents' demands. I have used three variables measuring residents' satisfaction level with respect to village officials' efforts to deal with some pressing governance issues in Chinese villages in the early 2000s. The first labelled as "Income Growth" measures the residents' perception of the extent to which the village officials have done a good job on promoting residents' income level. The second variable is "Spokesperson," which measures the extent to which a resident thought the village government had done enough to represent residents' stance and lobby for them at the higher-level governments. The third variable, "Mediation," measures the extent to which residents thought that the village government had been able to mediate conflicting interests across families and clans in the village. All three variables are categorical variables, where "very satisfied" is coded as 4, "satisfied" is coded as 3, "just so-so" is coded as 2, "not satisfied" is coded as 1, "very unsatisfied" is coded as 0, and "not sure" is coded as missing. Standard errors clustered at the village level are reported in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A13: Fiscal dependence and the One Child Policy: Alternative Outcome Measures

	Any Fine Collection		Fine Collection per HH	
	(1)	(2)	(3)	(4)
Fiscal dependence	0.110*	0.162**	0.421	0.542
	(0.059)	(0.069)	(0.277)	(0.331)
Year Fixed Effects	✓	✓	✓	✓
Village Fixed Effects	✓	✓	✓	✓
Province-Year Trends		✓		✓
Baseline Controls		✓		✓
Outcome Variable Mean	0.314	0.326	1.139	1.184
Observations	1316	1244	1316	1244
Villages	793	754	793	754

Notes: This appendix table shows that fiscal dependence is positively related to extra-kids fine collection in a village. Standard errors clustered at the village level are reported in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A14: Political Model Villages and the Collection of Extra-Kids Fines

	Log Extra-Kids Fine Size			
	(1)	(2)	(3)	(4)
Political model village	0.620** (0.313)			0.605* (0.364)
Economic model village		0.333 (0.303)		0.018 (0.371)
Agricultural production model village			0.305 (0.296)	0.013 (0.365)
Year fixed effects	✓	✓	✓	✓
County fixed effects	✓	✓	✓	✓
Outcome Variable Mean	3.012	3.004	3.010	3.012
Observations	1369	1376	1373	1369
Villages	816	820	818	816

Notes: To show that our measure for the enforcement of the One Child Policy is not biased, I test if political model villages (政治示范村) collected more extra-kids fines. Political model villages were villages recognized by township governments for their outstanding performance in areas such as the enforcement of the One Child Policy (计生), party building (党建), social stability (维稳), and so on. This table shows that political model villages indeed collected a larger size of extra-kids fines than other villages, contrary to the hypothesis that through working hard on the enforcement of the One Child Policy, political model villages would collect less extra-kids fines because fewer couples gave birth to extra children. However, economic (经济示范村) and agricultural production (农业生产基地) model villages (recognized by township governments for economic vibrancy and agricultural production respectively) were not associated with a larger size of extra-kids fines. The positive signs of economic and agricultural production model village quickly shrink to almost zero when we include all three types of model villages in the regression, while the coefficient of political model village hardly changes. The drop of significance level of political model village from column (1) to column (4) is probably due to the weak multi-collinearity across these three types of model villages. I have not introduced village fixed effects because the model village status rarely changed across years. Instead, I have included county fixed effects in all specifications. Standard errors clustered at the village level are reported in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.