Conflicts and Consumption*

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Abstract

Land acquisition is a commonplace and hotly debated policy for the developing countries due to opposing views on adequacy of compensation, held by the government and land-owning households. Theories abound as to what would be a good design for compensation. But the empirical question remains open – how do households respond in terms of consumption when they disagree about the quantum of compensation? We estimate consumption responses of households in quasi-randomized setups with six different events of land-acquisition-related conflicts in India between 2018 and 2019. Household-level consumption *increases* when the conflict arises due to disagreement about the level of monetary compensation (three cases of conflicts), does not change in other cases where the demand is for higher non-monetary compensation (residual three cases of conflicts). Current income does not change and borrowing for consumption goes down post the conflicts. We theorize that this increase in consumption reflects expectation about future income in the form of higher compensation with negligible downside risk. Overall, this work presents a novel scenario where conflicts are associated with increases in consumption of the parties involved in the conflict.

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> ... Land acquisition for expanding cities and industry is one of the most bitterly contentious issues in India, rife with corruption and violent protests. Yet in some areas it has created pockets of overnight wealth... – NYTimes (2010)[1]

1 Introduction

Acquisition of privately owned lands in developing countries for industry or development projects is a hotly debated topic. Discussions on such acquisition are rife with instances where land owners or tenants oppose the projects altogether or demand "fair" processes of acquisition accompanied by "adequate" compensation. These instances reflect frictions in the land market where sale of land to convert a relatively less productive resource to a more productive resource is reduced or becomes more difficult to accomplish (Chen, 2017; Foster & Rosenzweig, 2022). This is accompanied by a high degree of ambiguity in definitions on what is "fair" and "adequate" among the parties involved. In face of ambiguity, it is likely that the expectations of the land owners play a role in shaping up protests against land acquisition.

How do protesting households respond in terms of their consumption behaviour? Do households who engage in similar conflicts but demand higher non-monetary compensation rather than monetary compensation, show similar behaviour? How does income or borrowing change during the conflict? The literature does not provide answers to these questions. This paper empirically explores the behavior of the households engaging conflicts with the government – specifically how does consumption, income and borrowing respond during the protests. We show that consumption *increases* for households demanding higher monetary compensation. For households demanding higher non-monetary compensation, consumption does not change. Income does not change pr- and post- the conflicts. Borrowing for consumption on the other hand dips after engaging in conflicts.

To quantify the household responses, we merge two datasets. First, from a publicly available set of conflicts over land acquisition in India between 2018 and 2019, we identify six districts across India which saw protests against the government for higher monetary and non-monetary compensation for land acquisition. We map them to a consumption-income database at the household level allowing us to keep track of the

[1] See For India's Newly Rich Farmers, Limos Won't Do. – NYTimes (2010)

households pre- and post- the conflicts in those districts. Three conflicts were centred around monetary compensation – Khammam district in Telangana state, Mahendragarh district in Haryana state, and Ratnagiri district in Karnataka state. Three were over non-monetary compensation – Sikar district in Rajasthan state, Mandi district and Kangra district in Himachal Pradesh state.

We exploit a difference-in-differences estimation strategy with the conflict districts as the treatment group and their geographically neighboring districts as the control groups. Our difference-in-differences estimation results are robust to control groups comprising districts further away, placebo treatments as well as coarsened exact matching. An event-study design corroborates the finding that it is indeed the districts that demand higher monetary compensation, exhibit diverging consumption trend post the conflicts relative to the control groups.

Productivity Loss and Perceived Adequacy of Compensation: A growing literature pays attention on measuring land misallocation and the resulting implications on productivity (Gottlieb & Grobovšek, 2019; Adamopoulos *et al.*, 2022, 2024; Chen *et al.*, 2022, 2023). The focus being on the role of government restrictions on land transactions or insecure property rights which generate persistent mis-allocation leading to productivity loss. A companion literature has emerged which show how reforms aimed at reducing frictions in the specific contexts improve agricultural productivity and reduce misallocation (Adamopoulos & Restuccia, 2020; Chari *et al.*, 2021; Beg, 2022).

While it is important to measure how institutional interventions introducing or mitigating misallocation interact with household selection into farming- generating loss or gain in aggregate agricultural productivity - household expectations from subjective land valuation as a result of ambiguity in state lead institutional interventions aimed at facilitating reallocation may result in conflict leading to persistent frictions in land transactions. Specifically, state facilitated ambigious interventions aimed at land reallocation towards more productivity enhancing projects may be contested by the same households who are likely gain lumpsum compensation if such a reallocation took place.

It is plausible that land holdings are valued by households for reasons other than income it generates today or how productive the land holding is in the present. These valuations could be driven by expectations on lands' future income generation and productive potential, its expected security or insurance value and in its expected ability to help remove constraints to engage in non-agricultural activity. In the event of institutionally

driven intervention to acquire land towards more productive opportunities, households may resist such reallocation given their expectations from non-productivity valuations. Further when such interventions are implemented under institutional frameworks where pecuniary or monetary valuation of land to be acquired is ambiguous, households may engage in conflict with demands for higher than perceived market compensation.

A parallel literature focusing on the role of non-productivity valuation among farming communities in developing countries argue that non-productive sources of land value could cause divergence from maximization of productive efficiency (Ghatak *et al.*, 2013; Ghatak & Mookherjee, 2023, 2024). Ghatak and Mookherjee posit that in second best settings characterized by credit market imperfections with declining land valuation by wealth of farmers, the second best equilibrium results in a farm size distribution biased in favour of low ability, low wealth agents operating small low productivity farms. Hence less productive farmers with less wealth may ignore first best economic gains (like lower food price and price volatility) from sale of their land to high productive farmers. In such situations misallocation may persist leading to conflict after government interventions to facilitate productive reallocation are implemented.

We contribute to the literature by exploring how expectations in land valuation under second best settings may result in changes to household consumption responses. Specifically we identify and measure household responses in the event of conflict as a result of expected compensation demands not being met during land acquisition for productive reallocation with ambiguous institutional intervention.[2]

2013 Act for Land Acquisition and Compensation: All the above conflict occurred after the implementation of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (LARR, 2013). The law aimed to provide consent based procedure of land acquisition with an emphasis on compensation greater than the calculated market rate. For example the law requires consent of atleast 70% - 80% affected families for the land to be acquired.[3] The law in

[2]Households can disagree with land acquisition in three ways. First, if there is sufficient collective apprehension among the group of earmarked landowners to part with land, they may reject the bid to acquire their lands. Second, if landowners agree with the acquisition but are unhappy with the non-monetary compensations offered, they may holdout. Third, if landowners agree with the acquisition but seek higher monetary compensation for their lands, they may holdout. We look at the last two types of conflicts, where households agree with the acquisition but have higher compensation expectations.

[3]Consent for land acquisition is not an individual affair according to the law and is based on a majority consent of landowners. This, however, in subsequent amendments to the law, is applicable for

addition to the market value provides compensation for physical damages, changes in residence or business, damages to loss in profits during the acquisition period and any other compensation "in interest of equity, justice beneficial to the affected families." The goal of the law was to provide above market value compensation to stave of opposition during land acquisition.

While LARR 2013 replaced the Land acquisition act (LA) 1894 established during the British rule it did not remain the only law governing the acquisition of land in India by the centre. Table A2 describes 13 laws parallel to LARR which allows the centre to acquire land for reallocation and provide for compensation. Of these laws only 4 are driven by consent based compensation based on LARR 2013 given that they were previously utilizing procedures laid out in LA 1894. The rest provide ambiguous rules for compensation to be calculated either by a competent authority, tribunal or through arbitration. LARR 2013 provides for compensation involving ambiguous and subjective estimates or interpretation of "equity" and "justice" based on consent. Taken together the six conflict incidents we analyze take place under an ambiguous intervention of LARR 2013 and 13 other central laws on compensation of land for acquisition.

Conflicts lead to uncertainty and it is unclear, *a priori*, whether the demand for higher compensation will be fulfilled. We build a simple partial equilibrium framework interacting changes in household expectations on income or land price with expected gain from engaging in conflict over compensation in a two period set up. We posit that households that engage in conflict, will increase consumption in the present period to smooth consumption. In contrast for households who do not engage in conflict, their consumption would not show any fluctuations. We estimate difference-in-differences in household consumption expenditure between districts that have conflicts versus surrounding control districts using monthly household panel data.[4] We find that in the cases where higher monetary compensation demands are made, household consumption increases. In cases where non-monetary compensation demands are made, we find no change in consumption expenditure. We check and confirm that the parallel trends assumption holds for our analysis in each case. We verify our main results in three ways. First, we estimate the same results by using districts that are once removed from the treated district, to find that the results hold. Second, we re-estimate the main results on a coarsened exact

a subset of development projects. Defence-related projects or expansion of existing infrastructure, for instance, entail compulsory acquisition.

[4]We collate additional details about each land acquisition conflict from newspapers and government notifications to design our study.

matching sample. The results hold. Third, we estimate the main specification by shifting the treatment time back by one year. The results are all insignificant, implying that our main result holds.

Literature: Our study connects to primarily three strands of literature. First, we contribute to the literature on non-productive valuation in developing countries and resulting resistance to reallocate land to more productive agents leading to persistent misallocation in land transactions (Ghatak *et al.*, 2013; Sandig, 2021; Ghatak & Mookherjee, 2023, 2024). This also relates to the literature on different types of compensation during land acquisition under both first best settings without frictions and second best with frictions (Blume *et al.*, 1984; Ghatak & Mookherjee, 2014; Patil *et al.*, 2020). Second, we contribute to the literature on the causes (Chowdhury, 2013; Mishra & Mishra, 2017) and effects of land acquisition (Kleemann & Thiele, 2015; Le & Nguyen, 2020; Zhao & Hu, 2021). This allows us to connect to the literature on empirical assessment of outcomes of institutional interventions to improve rights over land as property or restrict land transactions (Chen *et al.*, 2022; Adamopoulos & Restuccia, 2020; Chari *et al.*, 2021). Finally, this paper also relates to the long and active literature on household consumption responses to windfall gains (Bodkin, 1959; Hsieh, 2003; Shefrin & Thaler, 1988; Jappelli & Pistaferri, 2010).

The rest of the paper proceeds as follows. Section 2 presents a theoretical framework and the guiding hypothesis for empirical testing. Section 3 gives the institutional background for each of the conflict case. Sections 4 and 5 describes the data and methodology, respectively. Section 6 and 7 provide main results and robustness checks. Section 8 discusses the key mechanisms. Section 9 summarizes the paper and concludes.

2 A Simple Model

To build intuition about the analysis, first we set up a simple partial equilibrium framework. The goal is to develop guiding principles for changes in consumption to changes in future income stream or land prices. All prices are determined outside the model of the intertemporal choice we will describe below.and the household is a price-taker in all markets in the capital market.

Consider a household who lives two periods – 1 and 2. The utility function is given by

$$U \;=\; u(c_1) + \beta\; E\big(u(c_2)\big). \tag{1}$$

This household holds a piece of land L_0 (held from the previous period) and the income streams are denoted by y_1 and y_2. There is financial market with interest rate r. The price of an unit piece of land is q_t for the t-th period. Thus the budget constraint in the first period is

$$c_1 + s_1 + q_1 L_1 \;\leq\; y_1 + q_1 L_0 \tag{2}$$

where s_1 is the savings (or borrowing) in the first period, and land can be bought and sold at some price q_1. We can rewrite it as

$$c_1 + s_1 + q_1(L_1 - L_0) \;\leq\; y_1. \tag{3}$$

The second period constraint is

$$c_2 + s_2 + q_2 L_2 \;\leq\; y_2 + s_1(1+r) + q_2 L_1. \tag{4}$$

Now, we assume that in the second period the household does not want to save anymore and additionally, the government will procure the land paying some compensatory price. Thus the budget constraint would be

$$c_2 \;\leq\; y_2 + s_1(1+r) + q_2 L_1. \tag{5}$$

Substituting the savings in the budget constraints, we can combine them and rewrite as

$$c_1 + \frac{c_2}{1+r} = y_1 + \frac{y_2}{1+r} + q_2\big(L_1 - \frac{L_1 - L_0}{1+r}\big). \tag{6}$$

where equality holds at the optimal. If there is no change in the land holding, then it simplifies further to

$$c_1 + \frac{c_2}{1+r} = y_1 + \frac{y_2}{1+r} + q_2 L_0. \tag{7}$$

Thus if there is any increase in the expectation of income y_2 or land price q_2, then the consumption of the household will increase in both periods. In case of land acquisition, a demand for higher compensation can be modelled by either an increase in the expectation of y_2 or q_2 (the piece of land held is of fixed quantity). For simplicity, assume that both

y_2 and q_2 can take two values – high (if the demand for higher compensation is satisfied) or low (status quo)

–

$$\xi = \begin{cases} \xi^{success} & \text{if higher compensation is given,} \\ \xi^{status\ quo} & \text{if status quo is maintained} \end{cases} \tag{8}$$

where $\xi^{success} > \xi^{status\ quo}$ and $\xi = y_2$ or q_2. Let us assume that there is a lumpsum cost of engaging in a conflict τ and the probability that the government yields to the demand is p. Then the default budget constraint is

$$c_1 + \frac{c_2}{1+r} = y_1 + \frac{y_2^{status\ quo}}{1+r} + q_2^{status\ quo} L_0. \tag{9}$$

If the household engages in a conflict, then the budget constraint is

$$c_1 + \frac{c_2}{1+r} = \begin{cases} y_1 + \frac{y_2^{success}}{1+r} + q_2^{success} L_0 - \tau & \text{with prob. } p, \\ y_1 + \frac{y_2^{status\ quo}}{1+r} + q_2^{status\ quo} L_0 - \tau. & \text{with prob. } 1-p. \end{cases} \tag{10}$$

Thus as long as the expected gain in engaging in a conflict is larger than not engaging, the household will engage in a conflict. This is unsurprising. But the less expected result is that they will increase their current consumption during the time of conflict. The necessary condition for that is that either the gain in income is larger than the probability weighted cost of engaging in the conflict

$$y_2^{success} - y_2^{status\ quo} > \frac{\tau}{p} \tag{11}$$

or the the gain in unit land price is larger than probability weighted cost of engaging in the conflict per unit of land

$$q_2^{success} - q_2^{status\ quo} > \frac{\tau}{p}.\frac{1}{L_0} \tag{12}$$

depending on whether the compensation comes in the form of income y or land price q (or both).

We posit that the households that go to a conflict with the government on the demand of higher monetary compensation, will then increase consumption in the present period to smooth consumption according to the above set up. This is in contrast to

the counterfactual where $\xi^{status\ quo}$ prevails where the compensation in the first period remains relatively low and status quo is maintained.[5]

This result has a few underpinning points. One, there is a market for borrowing and saving. We will empirically show that the households we study do indeed access the financial market. Two, the quantity of land held remains the same. While in principle, a secondary land market may develop before acquisition, in our context there is no empirical evidence suggesting that land exchanges happened prior to the conflict. Additionally, we note that for disputed lands, it is unlikely that a market would develop around it since in that case the original owners lose their claim on higher compensation from the government.

The above discussion leads to our guiding hypothesis for the empirical results. The implications are two-fold. There would be potentially one group of households who would not engage in a conflict over monetary compensation and their consumption would not show fluctuations. In contrast, there would be potentially one group of households who would engage in a conflict demanding higher compensation and they would increase their consumption during the time of conflict itself.

3 Institutional Background

In this section we present the institutional background for the six conflict events we analyze. Table 1 summarizes information on location of event, timing of event, purpose of land acquisition, laws applicable, estimated area being acquired, and whether compensation demanded was monetary or non-monetary. The location of conflict is spread across 5 states in India from Telangana in the south, Maharashtra and Rajasthan in the west, and Haryana and Himachal Pradesh in the north. All events involved land acquired for developing infrastructure namely highways, oil pipeline and airports. Three of the six event locations namely Khammam in Telangana, Mahendragarh in Haryana and Ratnagiri in Maharashtra had farmers protesting the intervention to acquire land with demands for higher monetary compensation. These demands included two to four times the market valuation (as per LARR 2013) of per acre land to be acquired. Further

[5] An easy way to capture this explicitly is to consider a quadratic utility of the form $u(c) = ac - \frac{b}{2}c^2$. Also, assume that $\beta(1+r) = 1$ to simplify the exposition. It is easy to show from the Euler equation $u'(c_1) = \beta(1+r)Eu'(c_2)$ that the first period consumption would be $c_1^{conflict} = \left(\frac{1+r}{2+r}\right)\left(y_1 + \frac{E(y_2)}{1+r} + E(q_2)L_0 - \tau\right)$. As long as $\frac{E(y_2)}{1+r} + E(q_2)L_0 - \tau > \frac{y_2^{status\ quo}}{1+r} + q_2^{status\ quo}L_0$, we have $c_1^{conflict} > c_1^{status\ quo}$.

demands include equal monetary compensation for all farmers (irrespective of whether the land acquired had different productive or fertility value) and additional monetary compensation to use land temporarily during infrastructure building as a result of the interventions.

The remaining three conflicts located in Sikar in Rajasthan, Mandi and Kangra in Himachal Pradesh had farmers protesting the intervention to acquire land with demands for non-monetary forms of compensation. Specifically in Sikar the protesting farmers demanded government jobs for a family member, free road access to residents, a share of the toll to be collected from the highway, alternate houses, tube wells, ten times the value of damaged crops and affected irrigable land etc. In Mandi, the farmers opposed the acquisition of all agricultural land for the construction of airport as neighboring farmers had in the past not received adequate monetary compensation for upgrading a neighboring highway. The key concern being multi-cropping and cash cropping would not be possible in the future if land were to be acquired due to loss in ground water availability, future damages from floods, and loss of jobs for migrant workers. In Kangra, the farmers protested the pause in the land acquisition leading to risks from uncertainty. Specifically the farmers demanded that state authorities provide clarity on the project's future and defer the recovery of bank loans they had taken (in expectation of land acquisition to be completed) for setting up housing and business in other locations including payment of bank interest.

All events listed in Table 1 had both LARR 2013 and the National Highway Act (NHA) 1956 applicable for state facilitated intervention to acquire land for highway construction expect in Ratnagiri where the Petroleum and Minerals Pipelines Act (PMPARUL), 1962 was applicable alongside LARR 2013. Interestingly, NHA 1956 and PMPARUL, 1962 have non-consent based determination of compensation for land acquired via a competent authority appointed by the centre. With the implementation of LARR in 2013, the state had to clarify the inconsistencies in determining compensation relative to the provisions as per NHA, 1956. The clarification issued by the Ministry of Road Transport and Highways (MoRTH) while allowing for the application of the first, second and third schedule of LARR 2013 for determining compensation under NHA 1956, provides important exemptions.[6]

First, Section 24 of LARR 2013 would not be applied to land acquired as per NHA

[6]The clarification was issued by the Joint secretary of MoRTH dated 28th December 2017. The link to the clarification can be found here Link to Official Clarification.

1956. This section states if any land acquired also included the specific mention of the now repealed Land Acquisition act (LAA), 1894 but the compensation was not paid to beneficiaries or physical possession not taken, then earlier terms of acquisition would be deemed to be lapsed and compensation may be recalculated as per LARR 2013. Second, unlike LARR 2013 which has compulsory requirement of a social impact study and payment of an additional 12% per annum of the calculated market value after applying multiplication factor for the period of such study; land acquired under NHA 1956 need to pay the additional 12% per annum after excluding the multiplication factor. Third, states including Telangana, Rajasthan, Maharashtra and Himachal Pradesh which issued their own guidelines for land acquisition on consent basis cannot enforce such guidelines to land being acquired under NHA 1956 for determining compensation. Further if such guidelines leads to higher compensation as calculated by the competent authority under NHA 1956 after applying the relevant sections of LARR 2013, the sates will have to bear the additional costs. Fourth, the competent authority need to calculate the market value of land from the date of publication of the preliminary notification under NHA 1956 and can ignore all investments made on the land after the date of such preliminary notification being issued. The aforementioned exemptions to NHA 1956 increases the ambiguity in determining "fair' and "adequate" compensation during interventions to reallocate land for highway or related projects.

Unlike NHA 1956, PMPARUL 1962 governs only the acquisition of the rights to use private land for building or laying down pipelines on temporary or permanent basis. Hence it has contradictory interpretations with LARR 2013 which results in full acquisition of ownership leading to inconsistencies in the method of calculating compensation for rights to use land while not acquiring it completely. Hence similar to NHA, PMPARUL 1962 increases the ambiguity in determining "fair" and "adequate" compensation during interventions to reallocate land rights for laying pipelines and related activities. Appendix Section 1.1 provides further description for each of the six conflict events.

4 Data

We deploy two sets of data for this study. The first is a compilation of a universe of conflict data related to land in India. The second is household panel data used for estimation. We also rely on institutional documents like government gazette notifications, court orders, and media reports where required.

The land conflict dataset builds on a public dataset[7] by verifying and adding details about individual conflict cases through available government/judicial documents or media reports. This dataset spans a wide variety of conflicts ranging from protests against land acquisition for road construction to court cases regarding displacement and rehabilitation around river dams. We conducted a preliminary data analysis of 26 unique locations from all over India that had significant conflict events[8] in 2018. We focused on those cases that involved compensation demands around land acquisition and distinguished between cases where demands were for monetary compensation and those where non-monetary demands were made. After further analysis, we were left with six cases, each of which had reasonably similar conflicts except for very localised contextual variation. The cases we identified were located in Khammam district (Telangana), Mahendragarh district (Haryana), Ratnagiri district (Maharashtra), Sikar district (Rajasthan), and Mandi and Kangra districts (Himachal Pradesh).

The cases in Khammam, Mahendragarh and Ratnagiri had to do with monetary compensation related to land acquisition. Khammam and Mahendragarh had to do with highway construction, while Ratnagiri was a case of land required for a gas pipeline[9]. Sikar and Kangra were again for highway construction, while Mandi was a case of land required for airport construction. These three cases were centred around non-monetary compensation demands.

The main data source for estimation is CPHS brought out by the CMIE, which is collected three times a year in four-month waves from a panel of households. Household income and consumption data for the current and previous months are collected and provided as monthly panel data. The CPHS panel has been available since January 2014. We use data between January 2016 and December 2019, allowing us to cover all six cases and placebo regressions for these cases. The national sample varied from about 112 thousand respondents to 149 thousand respondents during this time. We use smaller subsets of the data pertinent to our specific cases. In all the cases we consistently use data six months prior to and after the conflict event (Table 2). The Mahendragarh district conflict is the only exception where we restrict our post-treatment period to avoid capturing COVID-19 lockdown effects.

[7]Available at https://www.landconflictwatch.org/all-conflicts

[8]Significant events include public protests or filing court cases, for instance.

[9]In this case, the land was acquired for a temporary period, unlike the permanent acquisition in Khammam and Mahendragarh. Upon return, owners of this land could not, for instance, dig wells or undertake major land development as it would interfere with the pipeline.

5 Methodology

We identify six cases of conflict that are cleanly identified natural experiments that allow us to implement difference-in-difference estimations. While our unit of observation is a household, our treatment and control regions are defined at the scale of districts. In all cases, we have one treatment district, with neighbouring districts taken as the control group. Note that in all our cases, the majority of households belong to the control group.

The main specification is as follows:

$$\log(\mathrm{C}_{idt}) = \beta_0 + \beta_1 \mathrm{Conflict}_{id} + \beta_2 \mathrm{Post}_t + \beta_3(\mathrm{Conflict}_{id} \times \mathrm{Post}_t) + \gamma_i + \zeta_d + \delta_t + \epsilon_{idt} \quad (13)$$

The dependent variable in Equation 13 is $\log(\mathrm{C})_{idt}$ or the logarithm of monthly consumption expenditure of household 'i' in district 'd' at month 't'. $\mathrm{Conflict}_{id}$ is a dummy variable that takes the value 1 if the household belongs to the treatment district and 0 otherwise. Post_t is a dummy variable that takes the value 1 if a household is observed during the post-treatment period and 0 otherwise. β_3 is the difference-in-differences coefficient of interest on the interaction term Conflict $\times$ Post_{idt}. γ_i is for household fixed effects. ζ_d is for district fixed effects. δ_t is for month-fixed effects. ϵ_{idt} is the error term clustered at the district-month level. We apply panel survey weights with adjustments for non-response in all of our estimations.

It is important to note here that the design follows an *intent-to-treat* specification than direct treatment. This arises because we cannot identify the households which participated in the protest – such data is do not exist as far as we know. We identify the districts where the conflict took place and then construct the database on the household level variables from those districts and the neighboring districts. Hence, the resulting estimates are in the line of *intent-to-treat*.

This is the main specification we use for all estimations with suitable modifications as appropriate. In particular, to estimate placebo results, we shift the treatment cut-off back by one calendar year. Additionally, we complement the main estimation with an estimated model of a stacked difference-in-differences where all treatment periods aligned to estimate combined results, as if all the treatments occurred at the same time.

Finally, for each case, we estimate the consumption dynamics through an event study design and plot the coefficients for each case of conflict that we analyse. This helps us visualise the pre-trends to validate the interpretation of difference-in-differences. The

specification is as follows.

$$\log(\mathrm{C})_{idt} = \beta_0 + \beta_1 \mathrm{Conflict}_{id} + \sum_{t=-6}^{+6} \eta_t (\mathrm{Conflict}_{id} \times \mathrm{Month}_t) + \sum_{t=-6}^{+6} \theta_t (\mathrm{Month})_t + \gamma_i + \zeta_d + \delta_t + \epsilon_{idt} \tag{14}$$

Equation 14 is identical to Equation 13 in most respects, except that instead of the Post_t variable we estimate individual coefficients for each month during the study period. This we do by interacting each month with the treatment variable. This is given by $\sum_{t=-6}^{+6} \eta_t (\mathrm{Conflict} \times \mathrm{Month})_{idt}$, where $j = 1, ..., 12$, which yields 12 difference-in-differences coefficients. $\sum_{t=-6}^{+6} \theta_t (\mathrm{Month})_t$ yield level coefficients for each month. We run this for each of the six cases separately. The reference month in each of these estimations is the first month of the study period.

To visualize the treatment and control groups, we have plotted the districts in Figure 1 and Figure 2. The treated districts are shown in green and the neighboring districts for which we have data are shown in dark grey. The map of India is shown at the bottom-left of each panel with a red square indicating the location of the district on the map. Figure 1 shows three cases viz. Khammam, Mahendragarh and Ratnagiri, where the demands were for higher monetary compensation. Figure 2 shows the residual three cases viz. Sikar, Mandi and Kangra, where the demands were for higher non-monetary compensation.

6 Results

What happens to consumption during periods of conflict? Given the usual nature of destruction of resources, one would expect consumption to go down during conflicts. But the institutional backdrop surrounding land acquisition makes it different from other types of violent conflicts. Contrary to above, our results suggest that conflicts over land acquisition could actually lead to increases in consumption. This occurs in cases where monetary compensation is the main subject of conflict. However, this does not occur in cases where non-monetary issues are central to the disagreement. Our results here are estimated with Equation 13, with minor modifications indicated alongside the appropriate results.

Consumption: Our main variable of interest is consumption expenditure. There are six cases we have identified – Khammam, Mahendragarh, Ratnagiri, Sikar, Mandi and Kangra. We estimate Equation 13 and present the results in Table 3. Six columns show the coefficient of interest across six cases. We incorporate household– , district– and month–level fixed effects.

Out of the six cases, the first three of them show increases in consumption, while three show no changes after the conflict relative to their respective control groups. In terms of magnitude, Khammam saw a 31.5 percentage point increase in consumption (column 1 in Table 3), along with 7.8 in Mahendragarh (column 2) and 23 in Ratnagiri (column 3) relative to their respective control groups. These three conflicts centred around demands for larger monetary compensations. In Sikar, Mandi and Kangra, however, non-monetary demands were central to the conflicts, and these do not show consumption changes after the conflict event relative to their respective control districts.

Income: Since consumption has increased, a natural question would be how did income change for the same households. If the households are hand-to-mouth, then a consumption change should reflect income changes. What can lead to income changes? Three major possible sources are increases in total household transfers, boom in local economic activities leading to an increase in earnings and increase in valuation of land leading to total wealth of the household increasing and thereby increasing passive income e.g. rents. The first one is unlikely to happen given the fact the households engaged in the conflict with the government precisely due to the quantum of transfers – thus it is unlikely that that they will accept the transfer. The second channel is plausible – but it usually takes time to see a significant boom in economic activities which may go beyond the period of analysis here (six months post- the conflict). The third channel is not very active in the Indian context as the land market is not well developed. Thus while it is theoretically possible that there would be an income increase, the effect may not be very large. With this in the backdrop, let us explore the empirical results.

We present the results in Table 4. We estimate Equation 13 with total income as the outcome variable. Again the sample represents the six cases of conflicts – Khammam, Mahendragarh, Ratnagiri, Sikar, Mandi and Kangra. Six columns show the coefficient of interest across six cases. We incorporate household– , district– and month–level fixed effects.

Before describing the income results, we provide some contexts. Incomes for agri-

cultural households are largely synchronised with agricultural cycles and can, therefore, show prominent seasonality. Empirically, there may be months with very large incomes when the crop is sold in the market, and there may be months with near-zero incomes. Our goal is to explore here if there were significant changes in income post- the conflicts. To account for possible seasonality, we incorporate a time fixed effect.

Interestingly, income barley shows any significant changes. Khammam (column 1 in Table 4), Mahendragarh (column 2 in Table 4), and Ratnagiri (column 3 in Table 4) saw no statistically significant changes in income around the conflict. Sikar (column 4 in Table 4) shows an increase in income, but no consumption changes (column 4 in Table 3). Mandi saw a reduction in incomes (column 5 in Table 4), but no change in consumption (column 5 in Table 3). Kangra shows no changes in consumption (column 6 in Table 3 nor income (column 6 in Table 4).

Combining the above two sets of observations, we surmise that the consumption increases shown in Table 3 are not driven by income changes.

Borrowing: If income did not change, then how did the households fund their increased consumption? A likely candidate is borrowing or it may be funded by running down savings. This channel is tricky to explore due to lack of data. We do not have the quantity of borrowing of the households. We have data on only whether they had a borrowing or not, and what are the sources of borrowing along with the purpose of borrowing. The other problem here is that the frequency of these variables is not monthly. Instead they are collected once every four months. Thus we cannot match the timing cut-off and design of the monthly results we presented in the rest of our analysis.

With these caveats, we test for changes in borrowing. Our estimation equation is Equation 13 where the outcome variable is a binary variable that records whether a household has any outstanding borrowing taken for consumption purposes. The main coefficient of interest remains the same i.e., it is the interaction between the dummy variable indicating the presence of conflict in a district and the dummy variable indicating timing of the conflict in a district (i.e. conflictpost). We estimate the model for the three cases where consumption increased – Khammam, Mahendragarh and Ratnagiri. The results are presented in Table 5.

Khammam, Mahendragarh and Ratnagiri cases show decreases in borrowing for consumption. Overall borrowing only shows an increase for Khammam, but shows no change for Mahendragarh and Ratnagiri. In the three cases, consumption expenditure

went up, incomes did not change, while borrowing for consumption went down in all cases.

Therefore, since the households were taking lesser amount of debt to fund consumption, it has to be the case that they were funding their consumption by running down on their savings. An expectation of high enough income in the near future would make such a consumption pattern plausible.

Aggregate Estimates: To provide an aggregate response, we combine the cases within the two distinct sets of conflicts based on whether the demand was for higher monetary or non-monetary compensation. For each group, we jointly estimate the cases in them. All the results are presented in Table 6.

There are three estimates that we present. The first one is with all six cases as a stacked difference-in-differences estimation. The second one is with the cases of monetary compensation demands are grouped and estimated. The third one is only with the three cases with non-monetary compensation.

The first column shows the full samples with all six cases (Khammam, Mahendragarh, Ratnagiri, Sikar, Mandi and Kangra). The middle column shows the results for the monetary compensation cases (Khammam, Mahendragarh and Ratnagiri). The households in these cases jointly show higher consumption expenditure compared to the control districts after the conflict event. This is in line with the main results. The third column shows the results with three non-monetary cases estimated jointly (Sikar, Mandi and Kangra). The consumption response is insignificant – in line with the main results based on individual estimations.

7 Robustness

We conduct three sets of robustness tests. First, we estimate the main results with an alternative control group. Next, we use coarsened exact matching between treatment and control groups to re-estimate the main results. Lastly, we also re-estimate the main result in each case with a placebo treatment that occurs exactly one calendar year prior to the true treatment.

Alternate Control Group: The alternative control group we choose is the set of districts that are contiguous to the main control group. This means that the new control group is once removed from the treatment district. One expects that as one moves away from the treatment district (up to some reasonable extent), the difference-in-differences coefficient should be comparable to the immediate control group. This corroborates the sign of the main estimates. When it comes to magnitude, one may expect that the control group right next to the treatment district may be exposed to the treatment effect in some way, leading to a downward bias in the difference-in-differences coefficient. In Table 7 it appears that the Mahendragarh case seems to have a possible positive spillover on the control districts (compare to Table 3). The coefficient in the once-removed control group is higher (19.6 percentage points) compared to the original control group (7.8 percentage points), indicating that households in the control group also may have responded to the conflict that led to a lower DiD coefficient. However, in Khammam and Ratnagiri there is no obvious indication that coefficients are biased in any particular direction.

Coarsened Exact Matching: Coarsened exact matching allows us to match households on a variety of characteristics between the treatment and control districts. The coarsened matching was done for the pre-treatment period on five characteristics (rural/urban location, age characteristics, occupation, household size, and income). After matching households, which entails a small loss of sample, we re-estimate Equation 13. Table 9 shows the results of this matched sample. Notice that the sample size is now marginally smaller, but the coefficients are as good as identical to the results in Table 3. This lends confidence to our main result, which remains unchanged even after using a sampled matched on pre-treatment characteristics.

Placebo treatment: Table 10 shows results for the placebo regression. Here, we re-estimate Equation 13 with false treatments, exactly one calendar year before the true treatments. If our results were a mere coincidence or were due to systematic (for instance, seasonal) variations in the data, then placebo regressions would show statistically significant differences between treatment and control households. This is, however, not the case. All placebo regressions show that treatment and control regions were not different from each other a year prior to the treatment. This lends more credibility to our results.

Pre-trends: We check for pre-trends in consumption (Figure 3) and income (Figure 4). Figure 3 shows that Khammam, Mahendragarh and Ratnagiri show a clear increase in consumption expenditure with respect to the control group post the conflict. Sikar, Mandi and Kangra on the other hand, do not show any clear divergence. This is exactly in line with the difference-in-differences estimates. Figure 4 shows that none of the districts show significant changes in income with respect to the control group post treatment. Again, this is excatly in the same line as the individual estimations.

8 A Discussion on Mechanisms

The key observation of this paper is that consumption expenditure increases during the months post conflict with the government demanding higher monetary compensation. We also see that income did not correspondingly increase to fund this consumption increase and there is some support for arguing that borrowing for consumption actually reduced. Notably, there was no income increase for both groups – seeking a larger amount of monetary and non-monetary compensations.

Our theoretical argument presents the case that the gain in engaging in the conflict has a lower bound. In case the government does not increase compensation, the households will continue to receive the same income stream. In case, the government increases compensation, then the future discounted value increases. We think that the probability that the government will reduce compensation is virtually zero – given how politically sensitive such land acquisitions are.[10]

What kind of economic structure and institutional arrangements would lead to this outcome? The first is existence of financial market facilitating borrowing and savings. Without such a market, it is unlikely that without income increasing, the households can expect to fund current consumption with future income streams. Second, a formal well functioning land market did not exist prior to the conflict. This is known institutionally that the land valuation mechanism in India is not very stable and has evolved over time drastically (see Table A2).

[10]Here it may be instructive to note that such land acquisitions often led to changes in the political regimes. One notable case is Tata – an Indian multinational business conglomerate – tried to establish a car manufacturing plant in West Bengal, a state in India. In 2008, the requisite land acquisition led to political controversy which soon created an upheaval across political parties – eventually leading to the collapse of Communist Party of India losing in election after being in power for 34 years. See Land Acquisition Controversy in Singur – last accesses on 13th September, 2024.

Then a question appears as to what did the households base their demands on. In other words, how did they benchmark the valuation of the land in their own calculations? Since the land market did not exist and government valuation was historically sluggish to adjust to the comparatively rapid industrial growth, it is likely that the demands for higher monetary compensation are correlated more with valuations on productivity rather than non-productive valuation of the land (for example as security and collateral).

Are there possible mechanisms that can explain the consumption behavior other than our proposed explanation? For example, is it possible that it is actually the non-productive valuation of the land that matters to the households in the form of security and collateral, and not productive valuations? We think not. We note that the demand for non-monetary compensation did not lead to consumption increase. Given the nature of this non-monetary demand, it is more likely those demands actually reflect (or correlated with) security valuations or collateral valuations, in absence of land markets prior to interventions. This is in line with Ghatak *et al.* (2013). In summary, our preferred explanation is that the consumption increase reflects higher expected income in future.

9 Summary and Conclusions

Land acquisition of private land for industrial or development projects often entails resistance from private landowners, leading to project cancellations or delays. One way this has been theoretically analyzed is by providing a higher assured compensation to stave off resistance from landowners who part with their lands. We study household consumption responses to conflicts related to land acquisition compensations. We expect that conflicts will lead to unchanged or reduced household consumption. Uncertainty of windfall gains would likely lead to such consumption behaviour. Surprisingly, we find that conflicts involving monetary compensation re-negotiations positively affect consumption expenditure. The results are robust to alternative control districts, to coarsened exact matching, and to placebo tests.

We contribute to the literature on land acquisition conflicts and the nature of compensation demand, and macro-development literature on anticipated windfall gains and their effects on consumption expenditure.

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10 Tables & Figures

Table 1: Summary of Conflict Cases

Location District (State)	Month-Year	Nature of Construction	Relevant Law Applicable	Land Area Acquired (Ha.)	Compensation Primary Demand
Khammam (Telangana)	Nov 2018	Highway	LARR 2013, NHA 1956, EIAN 2006, REA act 2016	375	Monetary
Mahendragarh (Haryana)	Sept 2019	Highway	LARR 2013, NHA 1956	502	Monetary
Ratnagiri (Maharashtra)	Apr 2018	Pipeline	PMPARUL 1962, LARR 2013	109	Monetary
Sikar (Rajasthan)	Feb 2018	Highway	LARR Act 2013, NHA 1956	≈50	Non-monetary
Mandi (Himachal Pradesh)	Oct 2018	Airport	LARR Act 2013, NHA 1956	≈292	Non-monetary
Kangra (Himachal Pradesh)	Jun 2019	Highway	LARR Act 2013, NHA 1956	NA	Non-monetary

Table 2: Details of study design and sample

Conflict District	Before Treatment	After Treatment	Treatment Households	Control Households	Treatment Observations	Control Observations
Khammam	May 2018 - Oct 2018	Nov 2018 - May 2019	500	3,380	5,698	38,326
Mahendragarh	Mar 2019 - Aug 2019	Sep 2019 - Dec 2019	128	3,303	1,241	29,976
Ratnagiri	Oct 2017 - Mar 2018	Apr 2018 - Oct 2018	470	1,932	5,570	21,250
Sikar	Aug 2017 - Jan 2018	Feb 2018 - Aug 2018	416	1,650	5,570	21,520
Mandi	Apr 2018 - Sep 2018	Oct 2018 - Aug 2018	480	680	6,134	7,688
Kangra	Dec 2018 - May 2019	Jun 2019 - Dec 2019	80	1,365	963	16,535

Table 3: Consumption Rises in the Treatment Districts Despite Conflict over Monetary Compensation

District	Khammam	Mahendragarh	Ratnagiri	Sikar	Mandi	Kangra
conflict×post	31.471***	7.782*	22.927***	3.553	0.468	3.537
	(0.074)	(0.039)	(0.042)	(0.048)	(0.026)	(0.059)
Observations	44,011	31,217	27,088	23,885	13,822	17,497
R-squared	0.584	0.616	0.757	0.567	0.836	0.779
HH Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Clustered	District-Time	District-Time	District-Time	District-Time	District-Time	District-Time

Notes: These results are estimated using Equation 13 with log consumption expenditure as the outcome variable. The main coefficient of interest is the interaction between the dummy variable indicating the presence of conflict in a district and the dummy variable indicating timing of the conflict in a district (i.e. conflict×post). The control variables include household, district, and month fixed effects. The standard errors are clustered by district and time. Robust standard errors in parentheses. Coefficients have percentage interpretations. *** p<0.01, ** p<0.05, * p<0.1.

Table 4: Incomes do not Appear to Financing Consumption Increases

	(1)	(2)	(3)	(4)	(5)	(6)
District	Khammam	Mahendragarh	Ratnagiri	Sikar	Mandi	Kangra
conflict×post	64.950	6.374	-4.177	11.006**	-10.680***	10.450
	(0.389)	(0.097)	(0.116)	(0.041)	(0.018)	(0.115)
Observations	44,011	31,217	27,088	23,885	13,822	17,497
R-squared	0.288	0.424	0.485	0.497	0.915	0.656
HH Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Clustered	District-Time	District-Time	District-Time	District-Time	District-Time	District-Time

Notes: These results are estimated using Equation 13 with log total income as the outcome variable. The main coefficient of interest is the interaction between the dummy variable indicating the presence of conflict in a district and the dummy variable indicating timing of the conflict in a district (i.e. conflict×post). The control variables include household, district, and month fixed effects. The standard errors are clustered by district and time. The standard errors are clustered by district and time. Robust standard errors in parentheses. Coefficients have percentage interpretations. *** p<0.01, ** p<0.05, * p<0.1.

Table 5: Households Borrowed More to Finance Consumption Expenditure

	Khammam		Mahendragarh		Ratnagiri	
VARIABLES	All borrowing	For consumption	All borrowing	For consumption	All borrowing	For consumption
1.conflict × post	0.223**	-0.152**	-0.044	-0.080**	-0.083	-0.100***
	(0.102)	(0.058)	(0.074)	(0.033)	(0.050)	(0.034)
Observations	17,121	17,121	12,355	12,347	10,266	10,266
R-squared	0.409	0.456	0.657	0.484	0.400	0.460
HH Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Wave Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Clustered	District-Time	District-Time	District-Time	District-Time	District-Time	District-Time

Notes: These results are estimated using Equation 13 with binary outcome variables for borrowing. Columns 1, 3, 5 report results where the outcome is a binary variable indicating whether a household has any outstanding borrowing. Columns 2, 4, 6 is for the binary outcome variable that records whether a household has any outstanding borrowing taken for consumption purposes. The main coefficient of interest is the interaction between the dummy variable indicating the presence of conflict in a district and the dummy variable indicating timing of the conflict in a district (i.e. conflict×post). The control variables include household, district, and month fixed effects. The standard errors are clustered by district and time. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Consumption Rises when Monetary Compensation is part of Demand

VARIABLES	Full Sample	Khammam Mahendragarh Ratnagiri	Sikar Mandi Kangra
conflict×post	12.149***	23.971***	-1.777
	(0.038)	(0.047)	(0.051)
Observations	145,881	116,832	68,853
R-squared	0.687	0.665	0.591
HH Fixed Effects	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes
Clustered	District x Month	District x Month	District x Month

Notes: These results are estimated using Equation 13 with log consumption expenditure as the outcome variable. The data is stacked to compare across all cases as if they occurred together (controlling for individual case-specific month fixed effects as in earlier estimations). Column 1 shows the results with the full sample of all six cases. Column 2 shows the monetary compensation cases together. Column 3 shows the three non-monetary compensation cases together. The main coefficient of interest is the interaction between the dummy variable indicating the presence of conflict in a district and the dummy variable indicating timing of the conflict in a district (i.e. conflict×post). The control variables include household, district, and month fixed effects. The standard errors are clustered by district and time. Robust standard errors in parentheses. Coefficients have percentage interpretations. *** p<0.01, ** p<0.05, * p<0.1.

Table 7: Results with Distant Control Districts for Consumption

	(1)	(2)	(3)
District	Khammam	Mahendragarh	Ratnagiri
1.treat#1.post	10.702*	19.638***	16.727***
	(0.059)	(0.048)	(0.031)
Observations	58,358	26,406	79,666
R-squared	0.619	0.763	0.819
HH Fixed Effects	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes
Clustered	District-Time	District-Time	District-Time

Notes: These results are estimated using Equation 13 with log consumption expenditure as the outcome variable. The design is altered here to compare treated districts with an alternative control group of more distant districts. Results remain consistent in sign. Robust standard errors in parentheses. Coefficients have percentage interpretations. *** p<0.01, ** p<0.05, * p<0.1.

Table 8: Results with Distant Control Districts for Income

	(1)	(2)	(3)
District	Khammam	Mahendragarh	Ratnagiri
1.treat#1.post	41.358	17.027*	-2.295
	(0.357)	(0.089)	(0.041)
Observations	58,358	26,406	79,666
R-squared	0.255	0.563	0.756
HH Fixed Effects	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes
Clustered	District-Time	District-Time	District-Time

Notes: These results are estimated using Equation 13 with log total income as the outcome variable. The design is altered here to compare treated districts with an alternative control group of more distant districts. Robust standard errors in parentheses. Coefficients have percentage interpretations. *** p<0.01, ** p<0.05, * p<0.1.

Table 9: Coarsened Exact Matching

District	Khammam	Mahendragarh	Ratnagiri
conflict×post	31.797***	7.758*	22.930***
	(0.074)	(0.039)	(0.042)
Observations	42,964	31,094	26,332
R-squared	0.583	0.616	0.744
HH Fixed Effects	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes
Clustered	District-Time	District-Time	District-Time

Notes: These results are estimated using Equation 13 with log consumption expenditure as the outcome variable. The sample here is a coarsened exact matching sample based on rural/urban location, the age structure of household, occupation, size characteristics, and past income. The results are consistent with the main results. Robust standard errors in parentheses. Coefficients have percentage interpretations. *** p<0.01, ** p<0.05, * p<0.1.

Table 10: Placebo Results

District	Khammam	Mahendragarh	Ratnagiri
conflict×post	-7.513	2.046	0.080
	(0.059)	(0.037)	(0.041)
Observations	43,889	32,554	26,671
R-squared	0.670	0.583	0.736
HH Fixed Effects	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes
Clustered	District-Time	District-Time	District-Time

Notes: These results are estimated using Equation 13 with log consumption expenditure as the outcome variable. For placebo testing, we code the dummy variable indicating timing of the shock to one year before the true treatment. The results are insignificant, supporting our main results. Robust standard errors in parentheses. Coefficients have percentage interpretations. *** p<0.01, ** p<0.05, * p<0.1.

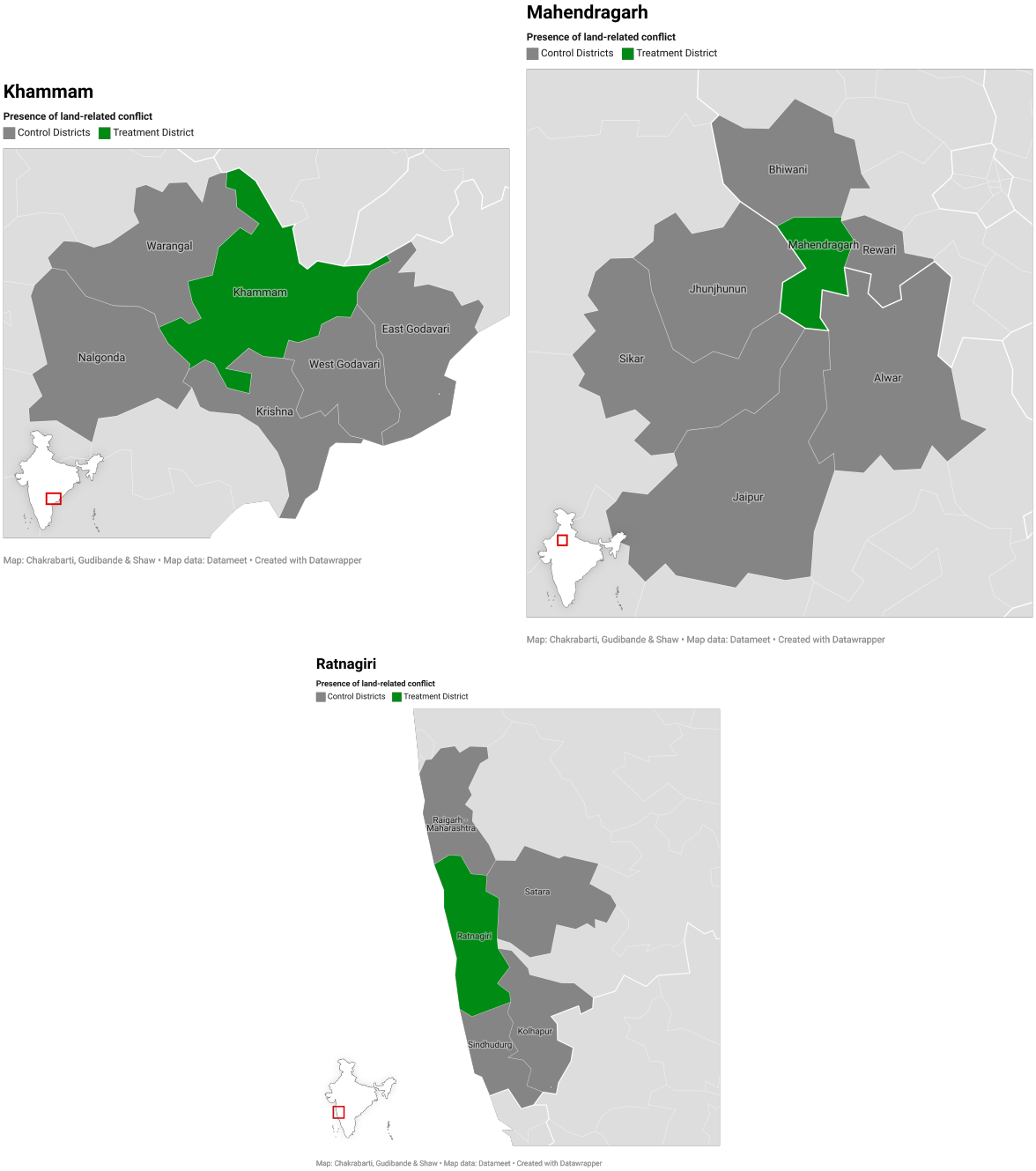

Figure 1: The treated districts are shown in green and the neighboring districts for which we have data are shown in dark grey. The map of India is shown at the bottom-left of each panel with a red square indicating the location of the district on the map. We show three cases here viz. Khammam, Mahendragarh and Ratnagiri. In these three, the demands were for higher monetary compensation.

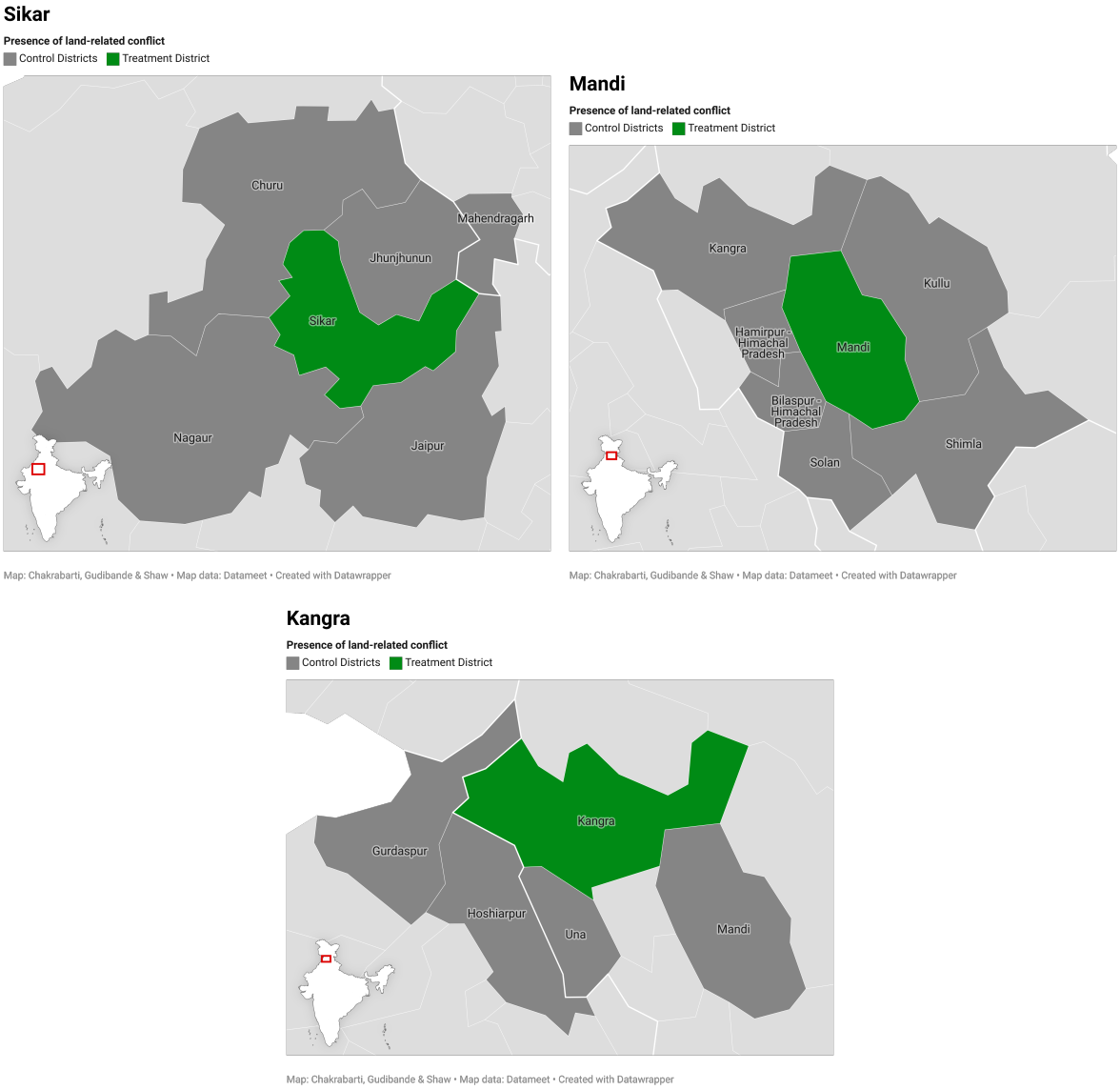

Figure 2: The treated districts are shown in green and the neighboring districts for which we have data are shown in dark grey. The map of India is shown at the bottom-left of each panel with a red square indicating the location of the district on the map. We show three cases here viz. Sikar, Mandi and Kangra. In these three, the demands were for higher non-monetary compensation.

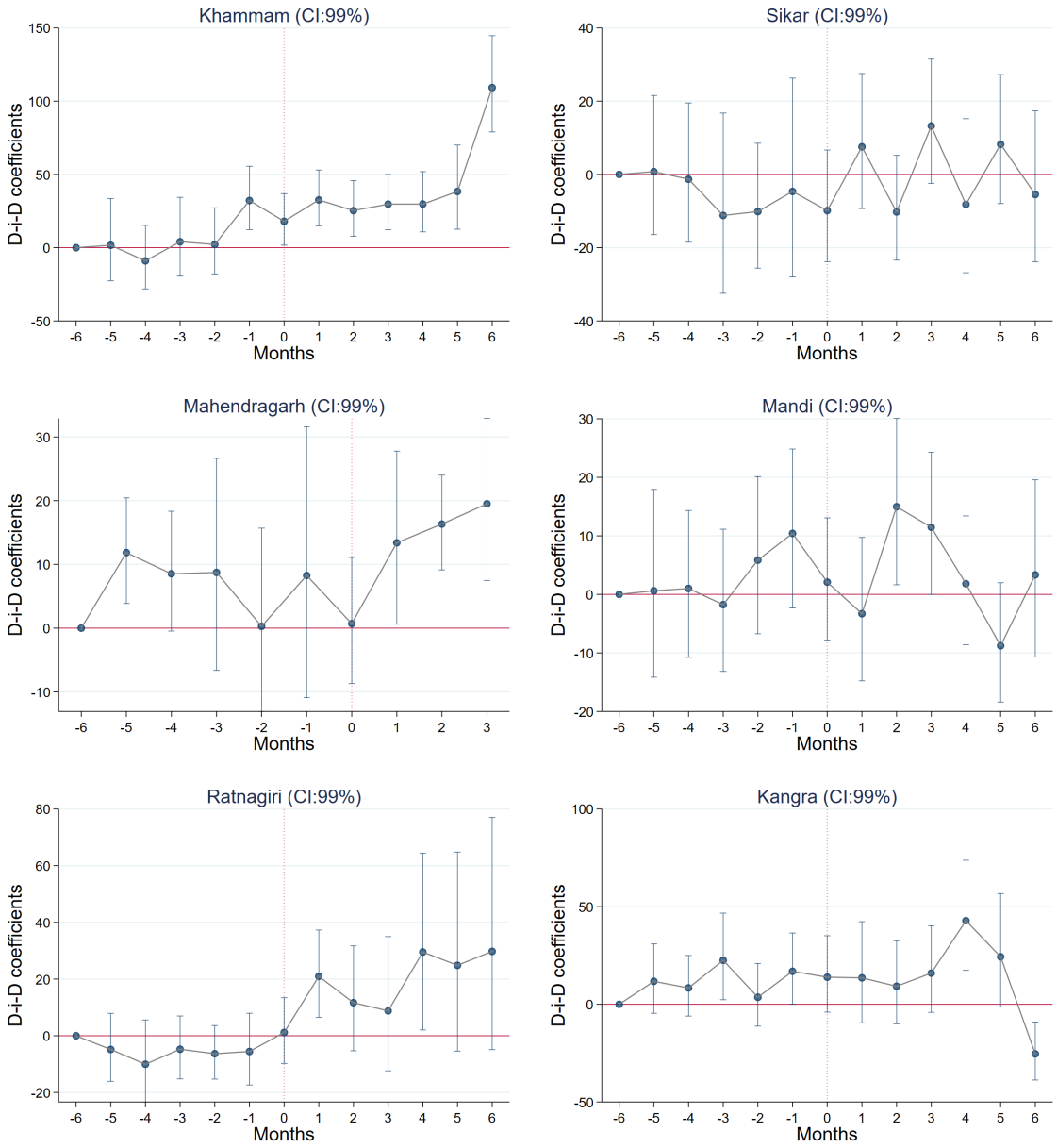

Figure 3: Coefficient plots of the six cases to evaluate pre-trends for household consumption expenditure. Khammam, Mahendragrah and Ratnagiri (left panel) shows an increasing trend post the conflict.

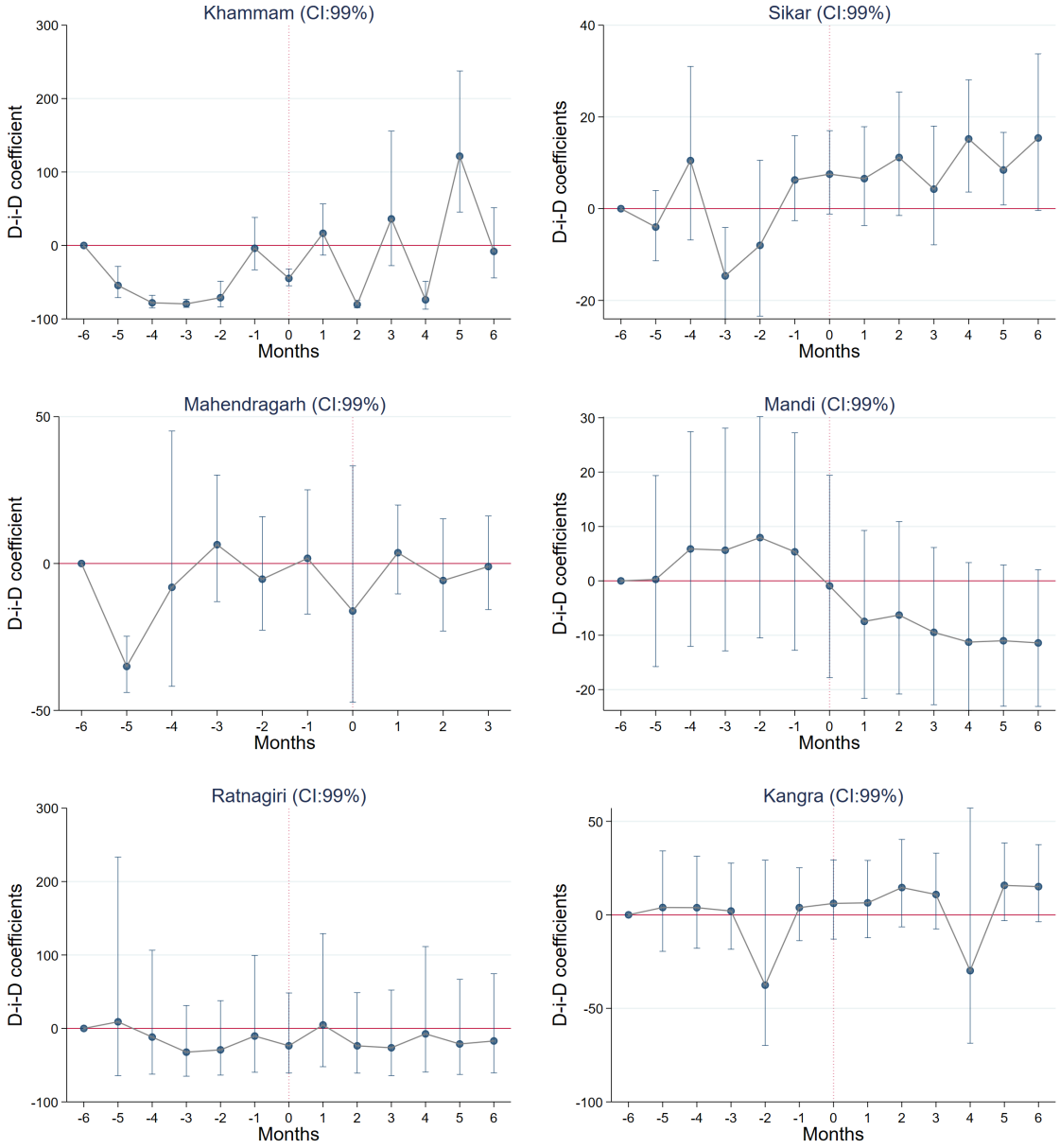

Figure 4: Coefficient plots of the six cases to evaluate pre-trends for household income. No discernible differential trends exist pre- and post- the conflicts.

Appendix

1.1 Conflict Event Specific Details

Here we present overviews of the institutional backdrop for each of the conflict.

1.1.1 Khammam

In November 2018 farmers in Khammam district[11] protested against the proposed Khammam-Devarapalli greenfield national highway project. They were concerned about the acquisition of fertile land and inadequate compensation. The highway was proposed in 2016 and is part of the National Highways Authority of India's (NHAI) Bharatmala Pariyojana. The new highway aimed to connect newer regions in Telangana and reduce the distance between Rajamahendravaram (Andhra Pradesh) and Khammam (Telangana). The protesting farmers put forth demand as a collective they called the Telangana Farmers' Joint Action Committee.[12] Farmers proposed that the government either choose to upgrade an existing state highway (between Khammam and Aswaraopet) or increase the compensation offer. The government presented a revised offer to the farmers whose land was to be acquired in February 2021. The highway's width would be reduced by 10 metres (reduce the land requirement by 350 acres), and the compensation per acre was increased from INR 1.2 million to INR 2.5 million. While farmers did demand even higher compensation, the acquisition process was completed at the said rate, and construction has commenced and is due for completion in 2024.

The conflict in Khammam, Telangana, involves various legislations and government departments. Key laws include the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013, and the Environmental Impact Assessment Notification, 2006. The Real Estate (Regulation and Development) Act, 2016, also plays a role in the dispute. The case is currently pending in the High Court for the State of Telangana. Various government departments, including the Revenue Department of Telangana, Transport Department, and National Highways Authority of India, are involved, along with corporate party Larsen & Toubro. Local organizations such as Telangana Rythu Sangam and political parties have submitted complaints and petitions to officials, highlighting the issue's complexity.

[11] Farmers from nine tehsils or sub-districts joined the protest. They belonged to Khammam Urban, Chintakani, Thallada, Konijerla, Wyra, Penuballi, Kallur, Vemsoor, and Sattupalli.

[12] This is not an organisation, but an ad hoc formation to collectively negotiate the issue at hand.

1.1.2 Mahendragarh

Since July 2019, farmers from affected villages[13] in Mahendragarh district, Haryana have been demanding fair compensation for their land that is being acquired for three national highways[14]. Farmers are rallying under the All India Kisan Sabha banner, which is affiliated with the Communist Party of India (Marxist). The farmers closer to the highway are being compensated at a higher rate than those with lands further away from it. One of the main contentions is that farmers are being offered different rates of compensation, ranging from INR 1.7 million to INR 10 million per acre. While the acquisition process began in 2018 itself, it has been slow and the project construction has been delayed.

The conflict involves various legislation. LARR, 2013, is a key legislation governing compensation, rehabilitation, and resettlement awards. Additionally, the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Social Impact Assessment and Consent) Rules, 2014, require prior consent from affected landowners, while the National Highways Act, 1956, allows for land acquisition by the Central Government and provides for objections to be raised within 21 days. These laws intersect and shape the conflict, with farmers seeking fair compensation and rehabilitation for their acquired land.

1.1.3 Ratnagiri

In March 2019, organisations of land owners, "Guhaghar Taluka Pipeline Sangharsh Samiti" and "Nirantar Konkan Kruti Samiti," wrote to the government demanding the stoppage of acquisition for the Jaigarh-Mangalore Natural Gas Pipeline that was to be developed by H-Energy. The opposition to the pipeline and a refinery plant concerned procedural issues and demands for higher compensation. Some alleged that they were not given due notice before the commencement of the right-of-use acquisition. Others alleged forged consent documents. Yet others insisted that the compensations be in accordance with LARR Act,2013 instead of PMPARUL Act,1962. The government as of 2020 was considering amending the law governing compensations for right-of-use acquisitions. However, the entire pipeline project appears to have been shelved after repeated delays in spite of close monitoring by the Petroleum and Natural Gas Regulatory Board.

[13]Land is being acquired from Sangroli, Barsana, Faral, Pandri and Jamba village.

[14]The highway projects are NH11 (from Rewari to Jaisalmer), NH148 B (from Kotputli to Hisar) and NH152 D (from Nangal Chaudhary to Ambala).

The LARR 2013 and the PMPARUL Act, 1962 (PMPARUL) have distinct differences. LARR 2013 focuses on comprehensive land acquisition, rehabilitation, and resettlement, whereas PMPARUL is limited to acquiring the right of user in land for pipeline projects. Additionally, LARR 2013 provides for robust compensation, including solatium, rehabilitation, and resettlement, whereas PMPARUL only compensates for the right of user. The procedures and provisions for affected persons also differ, with LARR 2013 offering more comprehensive protections. These inconsistencies highlight the unique purposes and scopes of each law, with LARR 2013 providing more extensive benefits and safeguards for affected landowners.

1.1.4 Sikar

Farmers dug pits and partially buried themselves to stop the national highway construction in February 2018. Farmers were demanding 10 times more compensation than was offered for arable land, a government job for a member of the affected households, free access to residents of Laxmangarh sub-district, a proportion of the toll collected on the highway, alternative housing, and tube wells for affected farmers. It is unclear if the demands of the farmers were eventually met, however, the road is complete and operational.

LARR 2013 is the central legislation, but additionally, the National Highways Act of 1956 allows for land acquisition for national highway projects, which is the purpose of the acquisition in this case. These laws intersect and shape the conflict, with farmers seeking fair compensation and rehabilitation under the 2013 Act, while authorities aimed to acquire land for the highway project under the 1956 Act.

1.1.5 Mandi

In October 2018, farmers who's land was slated for acquisition for Airport construction protested and petitioned the government under the banner of Balh Bachao Kisan Sangharsh Samiti (BBKSS). The concern was that fertile multi-crop agricultural land was being acquired. There was concern that the entire local economy would be disrupted if the land was acquired. There were also allegations that the government had not adhered to RFCTLARR Act,2013. The government and the Ministry of Civil Aviation did not relent and issued an in-principle approval for the project. Farmers protested again in December 2018 and have continued since. Residents in another protest event formed human chains in August 2020. The conflict is ongoing.

1.1.6 Kangra

In June 2019, the NHAI decided to discontinue the land acquisition process due to the district's high circle rates of land. In September the NHAI changed the width of the highway from 45 m to 33 m and utilise the route of existing highways to reduce the cost of land. The pause in the acquisition process meant that residents who had already taken out loans or made investments to find housing and work in alternative locations were distraught. Residents submitted memorandums and did not receive responses from the government. The president of the Four Lane Lok Body (FLLB), the group spearheading the movement, sat on an indefinite hunger strike, demanding clarity on the status of the project. The District Collector convinced the local cooperative bank that issued loans to defer its recovery. However, protests erupted again in November 2020, when another round of acquisition was conducted. This time, farmers were unhappy with the compensations announced and rejected the settlement. Those whose lands were partially acquired are still protesting. The conflict is yet unresolved.

Table A2: Summary of laws related to land acquisition

Year (1)	Policy summary (2)	Compensation Determination (3)
1885	Land Acquisitions (Mines) act - maps acquisition process, compensation and relief to affected parties	Competent Authority
1886	Indian Tramways act - Government can acquire land for the construction of tramway or related works	Land Acquisition Act 1894
1948	Resettlement of Displaced Persons (LA) Act - Centre (State) can acquire land at notice for the resettlement of displaced persons	Arbitration
1948	Damodar Valley Corporation Act - Corporation can acquire any land it deems necessary for public purpose	Land Acquisition Act 1894
1952	Requisition and Acquisition of IP Act - Centre can notify the acquisition of any property subject to requisition	Arbitration
1956	National Highways Act (NHA) - Centre can notify its intention to acquire any land for a national highway or part thereof	Competent Authority
1957	Coal Bearing Areas Acquisition and Development Act - Centre can acquire land at notice where coal is found to be obtained	Competent Tribunal
1958	AMASR Act- prohibits construction and restricts infrastructure within in a radius of an ancient monument	Land Acquisition Act, 1894
1962	Atomic Energy Act - Centre can vest land if any minerals can be obtained	Arbitration
1962	Petroleum and Minerals Pipelines Act- Centre can declare the right to use or restrict existing rights to use land	Competent Authority
1978	Metro Railways (Construction of Works) act - Centre can acquire land if metro railway deems it necessary	Competent Authority
1989	Railways Act - Centre can acquire land at notice for execution of railways or related project	Competent Authority
2003	Electricity Act - Land can be acquired for electricity supply and related work	Land Acquisition Act, 1894
2013	LARR - Consent-based procedures for Appropriate Government to acquire any land replacing LA act 1894	Consent