The Political Economy of Capture: Micromotives and Macrobehavior in India's Land Bureaucracy *

Anustubh Agnihotri[1], Aditya Dasgupta[2], and Devesh Kapur[3]

[1] Ashoka University
[2]University of California, Merced.
[3]Johns Hopkins University

September 15, 2022

Abstract

Bureaucracies play an important role in regulating markets. However, bureaucracies can be "captured" or promote private rent-seeking rather than public interest. Is capture due to the corrupt motives of bureaucrats and their collusion with special interests, as neoclassical theories suggest? We study what objectives bureaucrats maximize by eliciting the preferences of Indian administrators of land – a lucrative asset in urbanizing societies – over geographical job assignments in a nationwide survey. Officials' preferences over posts indicate that they are driven by mission (staffing, technology) and amenities (proximity to home) but not corruption potential (land transaction volume estimated from satellite imagery). Though bureaucrats are not intrinsically corrupt, the intensity of their preferences for desirable posts gives politicians leverage to extract rents from land deals through pressure exerted via control of transfers. Such pressure is widespread according to a list experiment and consistent with observed assignment patterns. The findings provide a novel perspective on capture and how political control of bureaucrat assignments drives a wedge between micromotives and macrobehavior.

*For invaluable research assistance, we thank Ankit Bhatia. For helpful feedback, we thank Rikhil Bhavnani, Alexandra Hartman, Dan Honig, Alexander Lee, Prakhar Misra, Aparna Ravi, Ian Turner, and seminar participants at MPSA 2022, University College London, and the University of Rochester. All errors are our own.

1 Introduction

Autonomous and professionalized bureaucracies — which are insulated from the influence of powerful economic and societal special interests -– play an important role in the effective regulation of markets and long-term economic development (Carpenter 2020; Evans 2012; Weber 2008). For this reason, most countries have evolved institutions designed to insulate bureaucrats from excessive outside control and pressure, with rules such as exam-based recruitment and civil service protections against arbitrary firing.

Despite these protections, bureaucracies sometimes succumb to "capture" – behaving in a manner that systematically promotes private rent-seeking rather than public interest. An important literature on regulatory and state capture has examined this phenomenon (Dal Bo 2006; Stigler 2021), often attributing capture to the corrupt motives of the officials comprising the bureaucracy. In the neoclassical view, dishonest types self-select into public sector, and, once in office, sell policy favors and access to private interests through explicit bribes or via implicit "revolving-door" inducements (Cowley and Smith 2014; Hanna and Wang 2017; Shleifer and Vishny 1993)

In this paper, following Schelling (2006), we question the intuitive but flawed assumption that the macrobehavior of organizations mechanistically reflects the micromotives of the agents that populate them. In particular, we explore how "bad" bureaucratic macrobehavior like regulatory capture and using policy to benefit special interests need not stem from bad motives of individual officials. Our framework is general but the empirical context is the market for land in urbanizing India – where shady land deals characterized by malfeasance and corruption are routinely rubber-stamped by the territorial bureaucracy tasked with administering land (see (Crabtree 2019; Levien 2018). Our focus is in particular on officials known as Tehsildars, whose approval is required before land zoned for agriculture within their geographical jurisdictions can be converted into commercial land usage (transactions worth billions of dollars annually in urbanizing India).

Our argument proceeds in two steps. First, we question the premise of public choice theory that the individuals who comprise bureaucracies are necessarily motivated primarily by corruption or the abuse of public office for private gain. There is good reason to think that real-world bureaucracies are populated not by the rent-maximizing trope of neoclassical theory but by skilled officials who typically maximize a complex mixture of objectives – including organizational mission and ordinary career considerations such as preferences for a job in a "good" location – comparable to those of most white-collar professionals. In any case, we think this is

an empirical matter, not an priori assumption, and lay out a framework for inferring bureaucrats' motivations from their revealed or stated preferences over real-world or hypothetical job assignments.

Second, we argue that organizational capture does not depend on micromotives of bureaucrats being dominated by corruption or rent-seeking. Whatever the micromotives of bureaucrats, politicians can leverage the preferences of officials to design incentive schemes induce bureaucratic compliance with rent-seeking, resulting in organizational capture. Such schemes can work even when officials are recruited on the basis of merit, are protected from firing, and are intrinsically motivated. All they require is that bureaucrats have strong preferences over some dimensions of their job over which politicians have influence, such as geographical assignments. With simple matching models – where a political principal has the power to assign bureaucrat agents to posts – we demonstrate how the *intensity of these preferences* can be leveraged to exert pressure on bureaucrats and distort bureaucratic decision-making to the advantage of rent-seeking special interests.

We test the argument with an original nationwide survey of over 500 Tehsildars responsible for the administration of land across jurisdictions containing more than 120 million people across 160 districts and 24 states in India. Tehsildars head local offices that manage land records, handle land disputes, and approve land transactions, including the conversion of agricultural land into land for commercial use. They therefore wield power over lucrative economic transactions in their geographical jurisdictions. Like mid-level bureaucrats in many settings, Tehsildars are recruited through merit-based exams and protected against firing by civil service laws, but are shuffled between geographical posts within states (Tehsildars are state-level civil servants). We design a novel cross-referenced survey which elicits preference ranking of officials over randomly selected real world posts that they could potentially be assigned to. We then measure attributes of these posts in order to infer their motives. We also study how these preferences are leveraged by politicians with control of assignment to exert pressure and distort bureaucratic macrobehavior to the advantage of special interests.

In the first step of the paper, we analyze the preferences of officials over real world geographical posts in order to infer their motives. We find that officials are not primarily driven by corruption: in pairwise comparisons, they do not systematically prefer postings with greater corruption potential (as proxied by the volume of rural-to-urban land transactions, over which Tehsildars have approval power, estimated from satellite imagery). We also find that bureaucrats do not have strong positive preferences for jurisdictions controlled by incumbent politicians, where collusion is

more likely to take place. Instead, they are driven by organizational mission: they prefer posts with greater organizational capacity as proxied by staffing levels and technology. They also have ordinary career considerations: they prefer locations where they and their families can live more comfortably (as proxied by measures of amenities, urbanization, and proximity to home). We also conduct three survey experiments where bureaucrats are asked to choose between two hypothetical jurisdictions that randomly vary in terms of attributes associated with corruption potential, organizational mission, and location amenities. Consistent with the ranking of real world postings, we find that in choices between two hypothetical posts with randomized attributes, bureaucrats consistently place greater weight on attributes associated with mission and amenities than on corruption. These results are consistent across preferences measured in ordinal terms as well as willingness to pay in salary-equivalent terms.

Having established the preferences/motives of bureaucrats, in the second step of the paper, we examine how individual preferences are aggregated into patterns of macrobehavior that result in bureaucratic capture. With a series of survey vignettes, we show that bureaucrats anticipate the threat of being transferred to a less desirable location if they fail to comply with pressure exerted by special interests such as land developers and politicians. We also provide evidence that the transfer threat is perceived to be wielded primarily by legislators belonging to the ruling party, which controls the ministries responsible for bureaucratic assignments. With a list experiment, we estimate the share of officials that have experienced undue pressure from a politician to approve a land deal in the preceding 6 months – arriving at an estimate of over 80 percent, indicating that such pressure on bureaucrats to bend their decision-making in a manner that concedes rents from land transactions to politicians and developers that finance them is virtually ubiquitous. To test whether the threat of transfers in used to extract rents from land administration, we take an observable implication of our matching models to the data on observed assignment patterns: for the transfer threat to have any bite, a bureaucrat must be posted to a location he or she "likes" relative to potential alternatives. By respecting bureaucratic preferences – especially in localities where bureaucratic compliance is at a premium i.e. in places where the value of land deals is considerable – politicians also maximize rent extraction. Consistent with prediction, we provide evidence that posts with high corruption potential – that is, jurisdictions with a historically large volume of rural-to-urban land transactions – are especially likely to be staffed by bureaucrats with greater proximity to their hometown and therefore with especially high willingness to comply with political directives in the face of the transfer threat.

Our paper makes three main contributions. The first is to provide one of the first systematic empirical tests of bureaucratic micro-motives through an unobtrusive analysis of their preferences over different real-world postings. Presumptions about the motives of unelected agents like bureaucrats or judges is widespread yet rarely subject to empirical scrutiny (see e.g. Posner (1993)). As a result, theories are often polarized between extreme views of bureaucrats either as public service mission-driven "automatons" (a view sometimes found in public administration) or rent-maximizing "kleptocrats" (a view sometimes found in economics). The paper does not suggest that bureaucrats are honest types or do not engage in corruption – indeed bureaucratic corruption is a reality faced by many across the globe and especially by citizens in India(Gupta 2012) . However, this paper puts forth a more realistic view, especially of the mid-level officials recruited through competitive merit-based examinations of the type examined in this paper. Bureaucrats have a mixture of motives: while some may be driven by corruption, most are likely to be both mission-driven and to have rather ordinary career concerns comparable to those of most educated professionals (like academics).

The second contribution is to challenge flawed assumption that the aggregate behavior of bureaucratic organizations mechanistically reflects the micro-motives of the agents that populate them. In Schelling's well-known book, he conjured multiple examples of how 'bad' macro-behavior – for instance, racial segregation – could emerge despite individuals not having particularly bad (e.g. racially discriminatory) preferences. We demonstrate an organizational analog in the case of bureaucracy, where organizations populated by honest officials can nevertheless succumb to corruption and capture by rent-seeking by private interests when politicians exert control over bureaucrat assignment systems. These personnel assignment systems have the structure of a one-sided matching market; though economists have generally studied these problems in terms of efficiency (Finan et al. 2017), as we show, influence over assignments also represents a potent instrument of political control of individual bureaucratic agents by politicians. Our paper contributes to a literature in comparative politics on how bureaucrat assignments can be utilized by politicians as an instrument of various objectives, ranging from development to rent extraction and coercion (Bhavnani and Lee 2018; Brierley 2020; Hassan 2020; Wade 1985). This stands in contrast to an older literature on political control of the bureaucracy in American politics that has generally taken a more "benevolent" view of oversight of a unitary bureaucracy by an elected principal using law-based/procedural tools (Calvert et al. 1989).

Finally, our paper makes a contribution to the literature on the political economy

of urbanization in developing countries. As low- and middle-income countries like India and China urbanize, land has grown in value – as well as evolved into arenas of vast "gilded age"-type corruption and speculation (Ang 2020; Crabtree 2019). In principle, if appropriately regulated, the development of land and changes in land use could be a source of efficient and equitable economic growth as citizens and firms can negotiate mutually and socially beneficial land transactions. In practice, the process is often badly managed and characterized by vast corruption and rent-seeking, as powerful economic interests and real estate developers utilize political connections and muscle to obtain land, especially agricultural land, on the cheap, and rapidly build without accounting for harmful congestion and externalities (Kohli 2012; Levien 2018; Kapur and Vaishnav 2013; Vaishnav 2017). In our opinion, these gilded age dynamics are not automatic and invariable processes of economic and political development but pathologies rooted in political economy, namely, as we have documented in the case of India, the capture of bureaucracies responsible for the regulation of land by rent-seeking special interests via the politicians they finance and the pressure that politicians are able to exert on nominally autonomous bureaucrats through the personnel management system.

The remainder of the paper is organized as follows. First, we develop the theoretical framework and then discuss the context in which we test our claims. Next, we present our research design before presenting the results and concluding.

2 Micromotives: What do Bureaucrats Maximize?

Bureaucracies are "captured" when special interest groups use their power to distort bureaucratic policy and decision making in their own favor (Carpenter and Moss 2013). A large literature has focused specifically on the capture of regulatory agencies Stigler (2021), but capture can take an array of forms ranging from procurement corruption, to the sale of access and licenses Shleifer and Vishny (1993), to biases in administrative procedures.

According to neoclassical economics and public choice theory, bureaucratic capture occurs because dishonest types self-select into the bureaucracy (Banerjee et al. 2015; Cowley and Smith 2014; Hanna and Wang 2017), and, once in office, sell policy favors and access to private interests through explicit bribes or via implicit "revolving-door" inducements (Dal Bo 2006; Shleifer and Vishny 1993; Hanna and Wang 2017; Stigler 2021). Self-selection of corrupt types into bureaucracy is held to occur because of abundant opportunities for corruption in the public sector arising from the gatekeeping power that bureaucrats exercise over licenses Shleifer and

Vishny (1993), the insulation of bureaucrats from performance incentives, as well as low levels of monitoring and oversight (Banerjee et al. 2008). As one article puts it: "Economic theory predicts that civil servants often shirk responsibility or take bribes because it is difficult for central governments and citizens to monitor and subsequently punish these bad behaviors... it follows that the types of individuals that select into government may help explain variation in corruption levels (Hanna and Wang 2017)".

Are bureaucrats really driven primarily by corruption? Like characterizations of other unelected agents such as judges Posner (1993), the motives of bureaucrats are often assumed but rarely subject to direct empirical tests. In the discussion that follows, we highlight some objectives that may plausibly enter bureaucrats' "utility functions" apart from rent-maximization and provide an empirical framework for making inferences about bureaucratic motivations from their revealed or stated preferences over job assignments.

It is a reasonable assumption that bureaucrats, like most humans, prefer more income and consumption to less. An official's income is a function of their salary as well as the degree to which they engage in corruption or abuse their public office for private again. At the same time, individuals may be attracted to jobs in the public sector for reasons entirely separate from corruption, including "public service motivation" or other forms of mission-driven intrinsic motivation (Crewson 1997). Individuals are said to be intrinsically motivated when they value the outcome of the task they are performing or fulfillment of their organizational mission independent from extrinsic incentives to do so (Banuri and Keefer 2013). Intrinsic motivation and a sense of mission are widely seen as important drivers of unique features of bureaucratic behavior (Prendergast 2007; Wilson 2019).

Apart from intrinsic motivation, bureaucrats may also have self-interested motives that represent ordinary careers concerns comparable to those of most white-collar professionals. Especially in developing countries, public sector jobs often come with a wage premium Finan et al. (2017), making a job in the bureaucracy attractive purely from a salary perspective. Applicants also value public sector jobs for their non-salary attributes, including job security and social prestige. For this reason, competitive examinations for public sector jobs often attract huge ratios of applicants to available positions. In India, the setting of this study, university-educated applicants for public sector jobs often stay out of the labor market for multiple years in order to prepare full-time for examinations Mangal (2021), implying a value attached to bureaucratic jobs that well exceeds their nominal salary.

Once selected into the state, bureaucrats enjoy wide discretion and gate keeping

powers, that could be used for rent-seeking. Thus, while in office bureaucrats working alone or along with politicians can use public office for private gains. While this narrative dominates the public perception of bureaucrats and a substantial portion of the literature, there are alternative explanations for why bureaucrats might attach negative costs to engaging in corruption. Bureaucracies are also well-known to be characterized by a "rule-following" culture. One reason for this is a desire to minimize blame and "squawk" in a context where bureaucrats are concerned about personal reputation and have to make difficult decisions subject to considerable scrutiny (Dewatripont et al. 1999; Leaver 2009). This represents a countervailing force against rent-seeking. Selling licenses, access, or other policy favors to private interests generates income but also the risk of this malfeasance being detected and penalized or ruining an official's reputation. To the degree an agent is "honest" engaging in corruption also imposes a psychological cost. As a result, the net marginal utility derived for every "increment" of corruption they engage in may well be negative for many if not most bureaucrats.

What mixture of these multiple plausible motives drives individuals to join the bureaucracy and governs their behavior while in public office? We think this is better addressed as an empirical matter rather than an a priori assumption and develop a framework for empirically inferring bureaucratic motives from their revealed or stated preferences over real-world or hypothetical job assignments. In virtually all bureaucracies, officials have choices of job assignments at a given level of seniority. For instance, tax collectors are assigned to tax collection zones (Bergeron et al. 2021; Khan et al. 2019), teachers to public schools (Beteille 2009), government doctors to public hospitals (Callen et al. 2013), police officers to precincts, officers to districts (Iyer and Mani 2011; Hassan 2020), and so forth. Bureaucrats typically have preferences over these job assignments which reflect their underlying motivations. That is, job assignments vary in a relevant set of attributes j which may capture differences in their scope for corruption, their prestige, their staffing levels, and so forth. Formally, the utility that a given official i derives from a given job assignment k can therefore be represented as:

$$U_i^k = \sum_j x_j^k \beta_j + \epsilon_i^k,$$

where x_j^k is a measure of a given attribute j for post k and β_j represents the degree to which an official values that attribute. The term ϵ_i^k represents the sum of a broad range of residual idiosyncratic factors which affect the utility a given official derives from a given post, the realization of which in the case of any given official-assignment

pair we take to be independently drawn from a normal distribution centered at zero. Given a choice between two posts A and B, the probability a randomly selected official i chooses A is:

$$Prob(U_i^A > U_i^B) = F(\sum_j \Delta x_j \beta_j) \quad s.t. \quad \Delta x_j = x_j^A - x_j^B$$

where F(·) is a normal CDF. If we are able to obtain enough data on choices made by a sample of bureaucrats choosing between a sample of posts – whether based on real-world choices made by bureaucrats or elicitation of stated preferences in survey experiments and questionnaires – we can estimate the weights β_j that bureaucrats attach to different attributes that may tell us something about their underlying motivations. We can estimate β_j directly with a structural model (which, in the case of a normally distributed error term, reduces to a Probit model) or estimate a linear approximation with OLS regressions.

For example, suppose we wanted to test for the importance of corruption as a driver of bureaucratic behavior. We could:

1. measure the corruption potential of a set of job assignments;
2. ask a set of bureaucrats for their preference rankings of these assignments (which under transitivity implies a preference over all pairwise comparisons);
3. empirically test whether the difference in the corruption potential of one assignment relative to another is predictive of choice in pairwise comparisons.

If the estimated weight/coefficient is large and positive, this would support an interpretation of corruption as representing an important motive. Similarly, by measuring other attributes of assignments, for instance organizational capacity as measured by staffing or technology or desirability of a location as a place to live as measured in terms of amenities or proximity to home, we can test for other motives like mission or ordinary career concerns.

3 From Micromotives to Macrobehavior

Once we measure bureaucratic micromotives, what insight does this give us about aggregate bureaucratic macrobehavior? Following Schelling (2006), we question the common assumption that macrobehavior of organizations and systems mechanistically reflects the micromotives of the agents that populate them. We focus in particular on how bureaucracies can succumb to systemic rent-seeking even when

the officials who comprise the bureaucracy are not seeking to maximize rents. We suggest that even if bureaucrats are maximizing preferences that are "benign" (not related to rent-seeking activities, but rather driven by organizational mission or desire for comfortable work environment), as long as these preferences are strong, they give politicians leverage to exert pressure on bureaucrats and extract rents through control over assignments . We illustrate this dynamic with a simple matching model

To see the intuition behind our argument, consider a simple setting where there are two bureaucrats $i = \{1, 2\}$ who are to be assigned by a political principal to two posts $k = \{A, B\}$ in each round and there are two rounds $T = \{1, 2\}$. The political principal may choose any 1-to-1 matching of bureaucrats to posts in the first round $\mu^{t=1}$ and then may commit to a contract/design a mechanism that maps bureaucrats' rent extraction levels, r_i, which are observed with zero-centered and normally distributed noise, v_i, in the first round to a 1-to-1 matching of bureaucrats to posts in the second round $\mu^{t=2}$. Each bureaucrat derives a certain amount of utility U_i^k from each post and derives disutility from collecting rents because they are honest. We make this strong assumption to highlight how capture can arise even in the seemingly unfavorable case where bureaucrats are intrinsically honest. That is, each bureaucrat's payoff is $\pi_i = U_i^k - r_i^2$. The goal of the political principal is to maximize $\sum r_i$ by devising a mechanism that induces the two bureaucrats, who are intrinsically averse to rent-seeking, to collect as many rents as possible.

Scenario 1: Consider the benchmark case where bureaucrats **do not** have strong preferences over posts in the sense that each bureaucrat derives the same utility from each assignment: $U_i^A = U_i^B = W$. In this case, there is no mechanism the ruling party can implement that would induce any of the bureaucrats to engage in rent-seeking in the first round, since the bureaucrats will get the same utility wherever they are posted in the second round and they are intrinsically averse to engaging in rent-seeking. As long as the ruling party cannot fire bureaucrats outright it has no leverage over their behavior. That is, equilibrium level of rents collected by each bureaucrat on behalf of the politician is $r_i^* = 0$.

Scenario 2: Consider a second case where the bureaucrats have *common* preferences over posts in the sense that both bureaucrats prefer post A to B: $U_i^A = W_A$ and $U_i^B = W_B$ and $W_A > W_B$. Now, the principal can implement a tournament of the form of a performance-ranked serial dictatorship (PRSD) where bureaucrats get to choose their posts in the second round in order of which generated the most rents in the first round (observed with some noise v_i). Since bureaucrats choose posts in order of desirability, the assignment in round two is $\mu^{t=2} = \{(1, A), (2, B)\}$ if $r_1 + v_1 > r_2 + v_2$ and $\mu^{t=2} = \{(2, A), (1, B)\}$ if $r_2 + v_2 > r_1 + v_1$ (with random-

ization in the case of ties). In this case, the probability that bureaucrat 1 gets the more desirable post A is $G(r_1 - r_2)$ where G$(\cdot)$ is the CDF of $v_2 - v_1$. Taking the other official's strategy as fixed bureaucrat 1 chooses a level of rent collection r_1 to optimize $W_A G(r_1 - r_2) + W_B[1 - G(r_1 - r_2)] - r_1^2$ and bureaucrat 2 has a symmetrical problem. In this case, there is a Nash equilibrium where equilibrium levels of rents are $r_i^* = \frac{(W_A - W_B)g(0)}{2}$. Each bureaucrat engages in rent collection proportional to the spread between the desirability of the two posts and has equal ex ante probability of getting either post. This case illustrates how competition for desirable posts can be leveraged by a political principal to exert pressure on honest officials to engage in rent-seeking to which they are intrinsically averse. It also illustrates how the quantity of rents the political principal can extract from the bureaucracy is increasing in the intensity of preferences over posts $(W_A - W_B)$.

Scenario 3: Consider a third case where bureaucrats have **heterogeneous** preferences over posts in the sense that each bureaucrat has a preference ranking over posts but the utility derived from each post differs across bureaucrats. For instance, let us assume that each bureaucrat has a "home bias" and gets W_1 units of utility from their home post and less utility (normalized to zero) otherwise where the home post of bureaucrat 1 is A and the home post of bureaucrat 2 is B: $U_1^A = W_1$ and $U_2^B = W_1$. In this case, the PRSD mechanism described above no longer creates incentives for bureaucrats to engage in rent-seeking, as they can anticipate that they do not need to compete with the other bureaucrat for their preferred posting. However, an alternative scheme does work where the ruling party i) places each bureaucrat initially in their "home" post in the first round and ii) retains them in their posts only if each bureaucrat meets an endogenously set θ threshold of rents that is observed with noise i.e. the probability that bureaucrat 1 is retained in their home post is $F(r_1 - \theta) \times F(r_2 - \theta)$ where F$(\cdot)$ is the normal CDF of $-v_i$. Taking the other official's strategy as fixed bureaucrat 1 chooses a level of rent collection r_1 to optimize $W_1 \times F(r_1 - \theta) \times F(r_2 - \theta) - r_1^2$ and bureaucrat 2 has a symmetrical problem. In this case, equilibrium levels of rent characterization are characterized by the following FOC: $r_i^* = \frac{(W_1 f(r_i^* - \theta) F(r_i^* - \theta))}{2}$. **This incentive scheme is only powerful when bureaucrats are located initially in their preferred posting and have something to lose from being transferred:** in other words, from the perspective of the principal the optimal matching in the first round is preference-respecting and assigns each official to their home post and in equilibrium each bureaucrat engages an amount of rent-seeking proportional to the strength of their home bias W_1. This will have important implications for our later analyses of bureaucratic assignments in the context of India.

As these models illustrate, bureaucrat preferences over posts give politicians with influence over assignments the leverage to induce even honest bureaucrats (those who get disutility from facilitating corruption) to engage in rent-seeking. This can occur despite the fact that bureaucrats are protected from firing. All it requires that politicians exert control over bureaucratic job assignments and that bureaucrats have strong preferences over posts. Moreover, the degree of pressure that politicians can exert on bureaucrats is increasing in the intensity of their preferences over posts. In the following section, we describe how these dynamics play out in the context of land administrators known as Tehsildars in India.

4 Tehsildars, Transfers, and Rent-seeking in India

Tehsildars represent a "soft" or "most likely" case for neoclassical theories which hold that bureaucrats are motivated by corruption, since such opportunities are potentially abundant in land administration in India. Tehsildars exercise veto power over land transactions, by virtue of their approval power over division of land, verification of land ownership, and most importantly change in the land-use that allows conversion of agricultural land for commercial usage. These functions give Tehsildars significant opportunity to extract rents from lucrative land deals.

Since the 1990s, India has rapidly liberalized and urbanized its economy, resulting in an unprecedented demand for the use of land for commercial and residential development– forcing urban areas to expand into rural and agricultural jurisdictions. The process of land acquisition is outside the domain of the urban local bodies and is handled by the land administration. When agricultural land is acquired from farmers and converted into urban land for commercial or real-estate development, the market value of that land is multiplied manyfold (Levien 2018). There are sometimes negative externalities for nearby communities in terms of congestion and pollution. This generates conflict between farmers and developers over the terms of land sales. Given the economic stakes, land developers have become central players in the political economy of rent-seeking in India, often leveraging connections to politicians or employing mafia-like tactics and middle men to coercively acquire land from farmers at cheap prices (Levien 2018; Sud 2014; Harriss-White and Michelutti 2019; Weinstein 2008). Unsurprisingly, developers and builders are some of the most important sources of campaign finance and kickbacks for politicians (Kapur and Vaishnav 2013).

An important potential backstop against malfeasance and rent-seeking in land deals is the land administration bureaucracy. Administrative approval of a land

deal requires the developer to obtain to "clean" land titles and transfer of property rights from all farmers with relevant titles to the private entity developing the land. Additionally, India has strict regulations on conditions under which agricultural land can be used for non-agricultural purposes. The Tehsildar is the authority responsible for approving these administrative processes and is tasked with ensuring that all legal procedures have been properly followed. Thus, the role of Tehsildar in the approval of conversion of agricultural land for commercial use also makes the official central in the large political economy around land markets.

Unsurprisingly, Tehsildars come under tremendous pressure in their jobs. Though they are recruited at the state level through merit-based exams and are protected from firing by civil service laws, they can be transferred between different geographical jurisdictions or Tehsils within their state by a central department. The threat of transfer to an undesirable location – sometimes known as a "punishment post" – is an important stick that is wielded by politicians to exert pressure on Tehsildars to rubber-stamp land deals characterized by malfeasance or that would not otherwise meet legal standards for approval (De Zwart 1994; Iyer and Mani 2011). It is a powerful threat, we argue, because Tehsildars have strong preferences over postings, which, consistent with our theoretical framework, gives politicians with influence over assignments – namely legislators belonging to the ruling party – powerful leverage over their behavior.

To study these dynamics empirically, in 2021 we conducted a nationwide survey of a nationally diverse sample more than 500 Tehsildars, implemented across over 160 districts and 24 states of India[1]. To measure officials' preferences over postings, we asked Tehsildars to rank three real-world posts within their district and five real-world posts within their state in terms of which locations they would more or less like to be located. The options they were presented were selected from Tehsils which we sampled in our survey, so that we could use cross-referenced information from the questionnaires to measure attributes of each post. We also conduct forced-choice survey experiments, where officials are presented with a series of vignettes representing a choice between two hypothetical posts with randomized attributes and asked about their preferred choice. We also collected a variety of information

[1]The survey was implemented in partnership with the Lal-Bahadur Shastri National Academy (LBSNA). The survey was administered across more than 500 Tehsils, 160 districts, and 24 state of India by officers who had been selected to be part of the India Administrative Services. LBSNAA trains new recruits into the elite Indian Administrative Service (IAS), a component of which includes training in an assigned district. As part of their training, IAS officer trainees were asked to administer the survey to three randomly sampled Tehsildars in each district they were assigned to. While we did not control the districts to which the trainees were sent, we did control the sampling of Tehsils within districts.

about Tehsildars themselves – for instance, the location of their hometown or their method of recruitment into the civil service – so that we could compare observed patterns of bureaucratic assignments against what we should expect to observe if the transfer system is used to exert pressure on bureaucrats to engage in rent-seeking as we have argued theoretically.

Figure 1 provides a map of the assigned location of Tehsildars in our sample relative to their hometowns. As we will show empirically, this is of particular significance since Tehsildars have a strong preference for being located close to their hometowns – and this represents a powerful lever of control for politicians.

Table 1 provides some key descriptive statistics on the characteristics of the bureaucrats and Tehsil locations in our sample. Tehsildars are mostly male and virtually all possess a bachelors or postgraduate degree. Their median age is 44 and nearly half entered the civil service through competitive examination. The median salary of Tehsildars is approximately 65,000 rupees per month – putting them comfortably in the top percentiles of the income distribution in India. This helps to explain the competitiveness of selection into the post – in competitive examinations the ratio of applicants to available vacancies for Tehsildar-track positions in the state civil service can often exceed 1000:1. The median Tehsildar has been employed in the civil service for over 13 years, and has typically been shuffled around posts frequently[2]

The data (See Table 1) also suggests that Tehsils vary quite a bit in their official resources and organizational capacity – measured in terms of a digitalization index measuring the number of services offered online or in terms of the total full-time employees – not unlike other local bureaucratic offices in India (Dasgupta and Kapur 2020). This variation across posts provides an opportunity to test whether organizational mission represents an important motivation among Tehsildars; if so, better-resourced jurisdictions where Tehsildars have greater capacity to achieve their objectives should be more desirable in preference rankings. Tehsils also vary substantially in terms of their desirability as a place to live for place-based and official-specific reasons. In the questionnaires, we asked each official how comfortable they found their current posting as a place to live (rated separate from as a place to work) for themselves and their family on a Likert scale from 1-5 – a question intended to capture a variety of attributes and amenities which may affect quality of life. We also measured how far each posted official was in kilometers from his or her hometown (where the official completed his/her high school matriculation). Tehsildars

[2]Placeholder: Use the transfer history to precisely quantify the number of positions held by officers on an average in the last 10 years?

are shuffled frequently between posts, and as a result they often live apart from their families and visit over weekends and holidays. This provides an opportunity to test whether quality of life represents an important motivation among Tehsildars; if so, jurisdictions that are closer to home and with better amenities should be more desirable in pairwise comparisons.

Tehsils also vary considerably in their "corruption potential" which we measure in terms of the volume of rural-to-urban land transactions — power over which, as discussed, potentially gives Tehsildars bargaining power to extract rents from land deals. To compute this variable, we use annual composite nightlights satellite imagery based on measurements taken by Visible Infrared Imaging Radiometer Suite (VIIRS) Day/Night Band (DNB) sensors on board the NASA/NOAA Polar-orbiting Partnership satellites to classify pixels in satellite imagery as either rural or urban (Elvidge et al. 2017). We do this by manually annotating "ground truth" urbanization in high-resolution satellite imagery for a randomly sampled set of Tehsils and using these images to calibrate a luminosity threshold; all pixels above this threshold are classified as urban and all pixels below this threshold are classified as rural (in the night lights data each pixel represents 750 sq meters). It is then possible to use polygons of Tehsil boundaries to compute the percentage of Tehsil land that is urban at any given point as well as change over a five-year period 2015-2020.

This remotely sensed data provides a source of variation to test whether corruption represents an important motivation among Tehsildars; if so, jurisdictions with greater corruption potential (higher volume of rural-to-urban land transactions in last 5 years) should be more desirable in preference rankings. In our analyses, we also control for static levels of urbanization as measured in 2020 to separate the value that Tehsildars attach to amenities associated with urban areas from the rate of change of urbanization that gives Tehsildars opportunities to extract rents from land deals. Figure 2 provides an illustration of the logic behind these analyses, overlaying high-resolution satellite images of selected Tehsils with night lights data shaded in green to represent areas that were urban in 2015 and shaded in red to represent areas that experienced urban change between 2015 and 2020. The top row are Tehsils with high levels of static urbanization and the bottom row are those with low static levels of urbanization. The left column are Tehsils with a high degree of urban change while those on the right have a low level of urban change. Tehsildars with ordinary career concerns would plausibly prefer areas with greater urban extent – but, conditional on urban extent, the rate of urban change should affect their preferences only if they are driven by corruption[3].

[3]We also validate this measure against land conversion case volume for a subset of the sample.

Finally, we also use overlap between Tehsil jurisdictions and state assembly constituencies[4] to assign every jurisdiction a measure of political alignment with the ruling party in power. We assign every village and urban local bodies within the Tehsil a political constituency and a value of 1 or 0 depending on if the winner of the latest state elections is part of the ruling coalition at the state level[5]. Thus, we are able to create a political alignment variable that captures the percentage of population aligned to the ruling party in power. We also operationalize the variable as percentage area aligned and the results remain the same.There is substantial variation in the extent to which jurisdictions are political aligned.

Before we turn to the quantitative analysis of bureaucratic preferences and bureaucratic assignment patterns, we first provide some descriptive data showing that pressure on Tehsildars to engage in rent-seeking through approval of land deals is indeed widespread. Figure 3 shows results to the question about whether a politician or the Tehsildar is likely to prevail in a hypothetical conflict over the appropriate resolution of a land dispute. The question compares between politicians at different levels of government and those affiliated with the ruling party or not. As the distribution of responses make clear, the politicians that are perceived to wield the greatest power over Tehsildars are legislators belonging to the ruling party, which controls the state departments responsible for Tehsildar transfers.

Panels B-D shows the distribution of responses where Tehsildars were asked to predict the likely outcome of hypothetical scenarios where a Tehsildar makes administrative decisions in land conflicts against the interests of different powerful actors, including real estate developers, politicians, and village landed elites (question text in caption). As the responses indicate, at a minimum Tehsildars view it as difficult to rule against these powerful actors in bureaucratic decision-making, and several report that they anticipate being over-ruled by a superior or transferred if they chose to do so.

Next, we estimate the share of Tehsildars who have actually experienced undue pressure from politicians to approve a land deal in the previous 6 month. To get answers to this sensitive question, we conducted a list experiment. Tehsildars were randomly assigned to a control or treatment condition, where those in the control condition were presented with 4 statements, and those in the treatment condition with an additional fifth statement pertaining to the sensitive item. We then asked each Tehsildar to tell us the number of statements that were true (not which individual statements were true). By comparing average counts in the treatment and

See Appendix for details

[4]Member of the Legislative Assembly

[5]We use the centroids of the village and urban local body shp file to check the overlap.

control conditions, this enables us to estimate the share of Tehsildars that have experienced undue pressure from a politician to approve a land deal without any individual Tehsildar having to reveal this information in an identifiable manner. As the results in Figure 4 illustrate, according to the list experiment, political pressure on land deals is virtually ubiquitous: more than 80 percent of Tehsildars report experiencing "undue pressure from politician to approve land deal" in the last 6 months.

5 Empirics I: Bureaucratic Preferences

The first step in our analysis is to estimate bureaucratic preferences over posts according the framework developed earlier in the paper in three exercises. First, we analyze officials' ranking of three Tehsils selected from within each respondent's district (for each Tehsildar, this represents 3 choose 2 or 3 pairwise comparisons). Then we look at their ranking of five Tehsils selected from within each respondent's state (for each Tehsildar, this represents 5 choose 2 or 10 pairwise comparisons). We then study their preferences in three forced-choice survey experiments where Tehsildars were presented with two hypothetical posts with two randomized attributes, one corresponding to high or low corruption potential and another corresponding to high or low values of a non-corruption attribute.

We start with the preference ranking exercises. Using the preference ranking data on all pairwise comparisons between real-world posts made by Tehsildars, we estimate OLS equations where the explanatory variables are: i) pairwise differences in attributes that measure the organizational capacity of a post (full-time employees, digitalization index), intended to proxy for the degree to which officials are motivated by organizational mission; ii) pairwise differences in attributes that measure amenities/comfort of location (amenities Likert score, percentage urban land, proximity in kilometers to hometown), intended to proxy for the degree to which officials are motivated by ordinary career concerns and desire for a comfortable location; iii) pairwise differences in corruption potential as measured by volume of rural-to-urban land transactions computed from night lights satellite imagery and iv) pairwise differences in the political alignment to the ruling party in power measured in terms of both the percentage of population and areas within the jurisdiction (See Appendix for details)

We look at two outcomes: first a simply binary preference indicator and second a measure of preference intensity in willingness-to-pay in rupees, computed from a question where Tehsildars were asked how much of a salary increase they would

require to voluntarily exchange their top-ranked post for their bottom-ranked post (since this measure was computed only in pairwise comparisons of top- and bottom-ranked posts, some data is dropped in this analysis).

The results for the within-district preference ranking exercise are reported in Table 2 and Table 3. The coefficients indicate that Tehsildars attach significant weight to attributes proxying for organizational mission and attributes proxying for career concerns/quality of life but little weight to the corruption potential of a location. Final column in Table 2, which looks at all attributes included in the regression equation simultaneously and a binary measure of choice in pairwise comparisons, shows that there is no association between one post's urban change/corruption potential and the chances of choosing it over another (once static levels of urbanization are controlled for). However, organizational capacity matters: for every 10 additional full-time employees , a Tehsildar is 3 percentage points more likely to prefer one post in their district over another. According to panel B, in willingness-to-pay terms, this translates into 10 additional employees being worth approximately 1500 rupees per month in terms of an official's salary that they would be willing to forgo in exchange.

As stated before the preferences over locations are multidimensional and officials are not purely driven by organizational mission; ordinary career concerns like quality of life figure strongly. As Table 2 and Table 3 shows the positive coefficients tell us that urbanization, amenities as judged subjectively by the official currently posted in a location, and proximity to home all matter (note that variation in proximity to home variable is mechanically constrained by the within-district design of this analysis) for which jurisdictions are preferred. For instance, every 1-point improvement in the amenities Likert score of one post relative to another results in a 5-percentage point improvement in the probability of preferring it; this translates into each point being worth approximately 6000 rupees per month in terms of an official's salary they would be willing to forgo in exchange. In contrast to the organizational mission and career concerns, the political alignment of the tehsil does not figure strongly in the reported preferences. The coefficients when looking at political alignment independently are -ve and significant indicating that bureaucrats prefer not to be placed in jurisdictions where the Member of Legislative Assembly is aligned with the party in power. When included in the overall regression the coefficient is -ve but statistically insignificant. The political alignment results along with evidence from the survey regarding power wielded by ruling party MLAs, suggests that bureaucrats are either ambivalent or do not prefer being in jurisdictions controlled by ruling party MLAs. This finding differs from literature that suggests that bureaucrats seek to align with politicians to ensure career progression or collude in rent

seeking activity (Iyer and Mani 2011; Wade 1985).

Table 4 and Table 5 report a comparable set of results where each official was presented with 5 choices from across their state (as opposed to 3 within the district) [6]. A similar pattern of coefficients emerges, with some important differences. First, staffing and technology adoption levels are no longer important predictors of preferences; this is plausibly because officials were less informed about these variables when comparing posts across the state as opposed to within their own district. Second, proximity to home becomes a particularly important determinant of bureaucratic preferences when competing assignments from across the state are compared. For every 100 kilometers closer to an official's home location that a posting is relative to another, an official is approximately 10 percentage points more likely to prefer it in a pairwise comparison. In willingness-to-pay terms, this means that every 100 kilometers of proximity to their hometown is worth 6500 rupees per month or approximately 10 percent of the median official's monthly salary. The political alignment of jurisdictions remains insignificant predictor of preference for jurisdictions[7]

Next, we report the results of three survey experiments, where we present the Tehsildars with two hypothetical postings each with randomized selection (high or low) of conditions on two attributes – one proxying for the corruption potential of a location and the other for non-corruption attribute of a location. Both attributes can take two conditions – high or low. In the first survey experiment, the corruption attribute is whether the post is located on the outskirts of expanding urban area (high) or far from an urban area (low); this is intended to proxy for the volume of land transactions. The non-corruption attribute is whether the quality of schools and hospitals in the area is good (high) or poor (low); this is intended to capture variables that proxy for quality of life. In the second survey experiment, the corruption attribute is whether the region is agriculturally productive (high) or unproductive (low); this is intended to proxy for high versus low land values. The non-corruption attribute is whether the posting is well-staffed (high) or poorly staffed (low); this is intended to proxy for organizational capacity which may impact a bureaucrat's capacity to achieve their mission (see e.g. Dasgupta and Kapur (2020)). In the third survey experiment, the corruption attribute is whether land records are paper-based (high) or digitized (low); digitization reduces the amount of discretion an official might have in manipulating and extracting bribes in land transactions. The non-

[6]Note that this exercise was only carried out with Tehsildars in large states where at least 5 different districts were sampled in the survey. This prunes some respondents from the analysis.

[7]Even when coefficients are significant they are negative, suggesting that Tehsildars are less likely to prefer jurisdictions that are aligned to the party in power at the state level.

corruption attribute is whether the location good bus and rail connectivity (high) or poor transportation connectivity; this is intended to proxy for the ease with which officials can travel home from their posting.

The results are reported in Tables 6 7 8. As the coefficients indicate, officials in every survey experiment placed considerably greater "weight" on the non-corruption attribute in the sense that a high value of the non-corruption attribute was more likely to encourage them to select one post over another than was a high value of the corruption potential attribute and that they placed a greater monetary value on the non-corruption attribute than on the corruption attribute in terms of wiliness-to-pay/forgo salary. In one survey experiment (Conjoint 3) a high value of the corruption potential attribute (paper-based records) was actually associated negatively with preferences over postings. The coefficients on some of the corruption potential variables are positive. Comparing against our earlier observational results, we think this is likely because these attributes are cueing potentially non-corruption related desirable traits, like proximity to urban areas or lower levels of poverty. These coefficients are therefore better thought of as an upper bound on the degree to which officials are motivated to seek out posts based on their corruption potential.

6 Empirics II: Observed Bureaucratic Assignments

Tehsildars do not appear to be driven solely by corruption incentives. While deciding on the location of jurisdictions to work they prefer postings with better organizational capacity and ordinary career concerns like desire for comfortable locations with amenities and in proximity to their hometowns. These preferences are multifaceted and large in salary-equivalent terms. Do politicians exploit these preferences as lever of control and rent extraction by threatening to transfer non-compliant bureaucrats to less desirable posts, as we have suggested theoretically? Measuring such corruption and political capture directly is difficult both because it is a sensitive item and because it depends on measuring a counterfactual: would a bureaucrat have behaved differently (e.g. failed to approve a land transaction) if he or she were not subject to the political threat of being transferred?

To resolve this issue and develop empirically testable implications of our theoretical framework, we build on a simple insight developed in our earlier analytical models: for the transfer threat to have any bite, a given bureaucrat must be posted in a location he or she likes relative to potential alternatives. As a result, politicians ought to have incentives to ensure that posts with high corruption potential (those with a high volume of rural-to-urban land transactions) are staffed by bureaucrats

with a strong desire to remain in that location. As our empirical analysis of preferences over postings has established, one bureaucrat-specific measure of this is how proximate a post is in kilometers to the bureaucrat's hometown. If the posted bureaucrat is located far from their hometown, they have little incentive to comply with pressure to engage in rent-seeking under threat of transfer to another location. However, if he or she is posted in or very close to their hometown, the incentives to comply in order to remain in that location are strong. Therefore, if pressure exerted through political control of assignments is utilized to extract rents from land deals, then we should expect to observe an association between corruption potential and proximity to home of the bureaucrat posted in a given jurisdiction. This pattern could also emerge through selection: only bureaucrats with high valuations of a location where corruption demands are heavy would choose to comply in order to remain.

We might also imagine that similar strategic assignment dynamics could apply to different "types" of bureaucrats (for instance, those who vary in their degree of intrinsic honesty or the degree to which they experience disutility from bending the rules or enabling corruption). For reasons analogous to those describe above, politicians ought to have strong incentives to ensure that less honest or more compliant types are posted to locations with high corruption potential. One source of potential variation in type is method of entry into the civil service. Those recruited into the civil service through merit-based exams and selected from the very top percentiles of examinees are highly unlikely to be selected for loyalty or compliance. However, bureaucrats who have joined the civil service through discretionary promotion from a lower-level tier of the bureaucracy may well have been screened and selected precisely for their willingness to comply with political directives. We may therefore also expect to see less honest types – in our case, proxied by non-exam-based entry into the civil service – to be associated with jurisdictions with higher corruption potential. Another source of variation in bureaucrat type is years of service. New recruits to the civil service may be idealistic and relatively resistant to outside pressure whereas long-time civil servants may be "old hands" who are inured to the system and more willing to comply with pressure from politicians to engage in rent-seeking in land deals.

We take these predictions to the data on observed bureaucrat assignment patterns in Table 9. As the coefficients indicate, observed patterns of bureaucratic assignments are consistent with our theoretical framework. For instance, posts with greater corruption potential are much more likely to be staffed by bureaucrats who live in proximity to those locations. Columns (1) and (2) suggest that a

10-percentage point increase in the volume of rural-to-urban land transactions in a jurisdiction over a 5-year period is associated with 10-11 percent improvement in the proximity of the bureaucrat posted in that location measured in terms of geodesic distance and driving distance to that official's hometown. These results also hold when the distance from home is measured in terms of time[8]Similarly, posts with greater corruption potential are much more likely to be staffed by bureaucrats who did not enter the bureaucracy through competitive examinations. Column (4) suggests that a 10-percentage point increase in the volume of rural-to-urban land transactions in a jurisdiction over a 5-year period is associated with 4 percentage point increase in the probability of being staffed by a bureaucrat who entered the civil service through promotion from lower tiers (as opposed to thorough examination). Column (4), however, suggests that our predictions regarding years in service are not confirmed; posts with greater corruption potential are not typically staffed by bureaucrats with greater seniority in terms of total years served in the civil service.

7 Conclusion

The paper has provided a new theoretical and empirical framework to think about bureaucratic capture. When bureaucracies behave in ways that systematically favor private rent-seeking rather than public interest, suspicion naturally turns to the potentially corrupt motives of the officials who comprise the bureaucracy. In this paper, we have developed a framework for inferring bureaucratic motives from their stated or revealed preferences over job assignments and applied the method to Tehsildars in India, who represent a "most likely" case for theories which posit that corruption is an important motivation among bureaucrats. Our results suggest that officials have ordinary career concerns and are driven by mission but not corruption: in real-world comparisons and survey experiments, they do not prefer assignments with greater corruption potential but do prefer posts with desirable amenities and in proximity to their hometowns as well as those with better staffing and technology adoption.

We have also highlighted how bureaucracies populated by public-spirited officials may succumb to capture – when politicians with control over their job assignments leverage their ordinary micromotives in incentive schemes designed to extract rents on behalf of special interests. Using vignettes and a list experiment in a national sample of land administration officials across India, we have provided evidence that

[8]We use the Google API to calculate the driving time between points. The negative value indicates that in jurisdictions that experience rapid urbanization the driving time to home is smaller.

pressure from politicians to approve land deals and resolve conflicts in a manner that favors powerful special interests like real estate developers is virtually ubiquitous. We also provided evidence that the lever of political pressure is the power of ruling-party legislators to transfer bureaucrats to less desirable posts – a lever that is powerful precisely because bureaucrats have strong preferences over posts in salary-equivalent terms. Consistent with a simple model of these dynamics, we have provided evidence that posts with especially high corruption potential – estimated from satellite imagery – tend to be staffed by bureaucrats who are especially vulnerable to the transfer threat because they strongly prefer to remain in those posts due to proximity to their hometowns. As a result, bad bureaucratic macrobehavior and corruption and capture of the land administration bureaucracy arises without individual bureaucrats necessarily having bad micromotives.

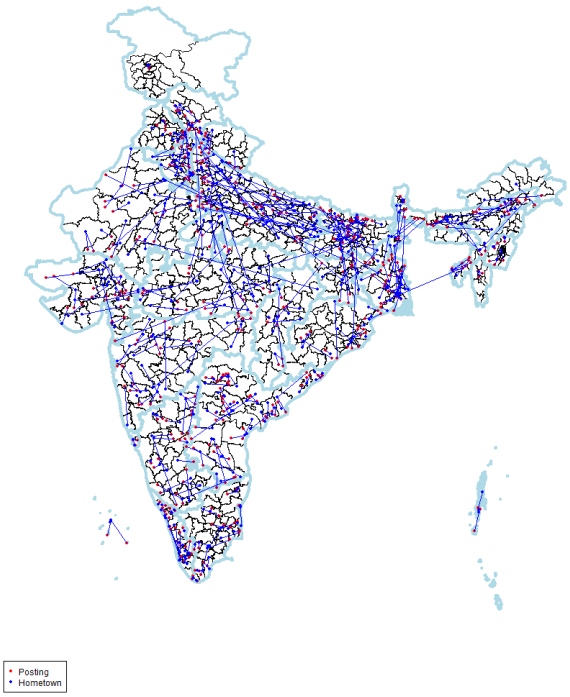
Similar dynamics surely characterize other bureaucracies around the world. Though bureaucrats may be recruited meritocratically protected from firing by civil service laws, they are vulnerable to political pressure as long as politicians exercise influence over job assignments and bureaucrats have preferences over posts. This is likely to be the case in territorial bureaucracies of the type found in India and other commonwealth countries, where bureaucrats are frequently shuffled horizontally around geographical jurisdictions (see e.g. (Brierley 2020; Bergeron et al. 2021; Hassan 2020; Wade 1982). But similar dynamics are likely to exist in centrally organized bureaucracies of the type found, for example, in the US, where different job assignment at a given level of seniority may differ in their attributes. Disaggregating unitary models of bureaucracy and theorizing the multi-dimensional preferences of bureaucrats can allow researchers to better understand the constrained faced by bureucrats and studying how control over personnel decisions represents an instrument of political control and rent-extraction is an important topic for continuing research.

Given the dynamics we have documented, how is bureaucratic capture best remedied? Thinking through ways in which politicians can retain statutory oversight of the bureaucracy – an important part of democracy – without exerting excessive control and maintaining an arms-length relationship with regards to decision-making by individual bureaucrats is an important task for scholars and policymakers. One solution might be to mitigate political control on the intensive margin with hardship pay. By compensating with higher salaries bureaucrats who are posted far away from home or who are assigned to less intrinsically desirable jurisdictions or assignments, one could weaken the fundamental lever that politicians utilize to manipulate bureaucratic behavior. Another solution is institutional: bureaucrats should have fixed tenures in posts and assignments should be implemented by independent com-

missions or according to performance or rule-based criteria that allow bureaucrats to choose from posts according to publicly announced performance metrics. By setting such criteria but eliminating the discretion that politicians wield over individual bureaucrat assignments, this would permit politicians to exercise aggregate oversight over the bureaucracy without distorting individual decision-making to the benefit of powerful special interests.

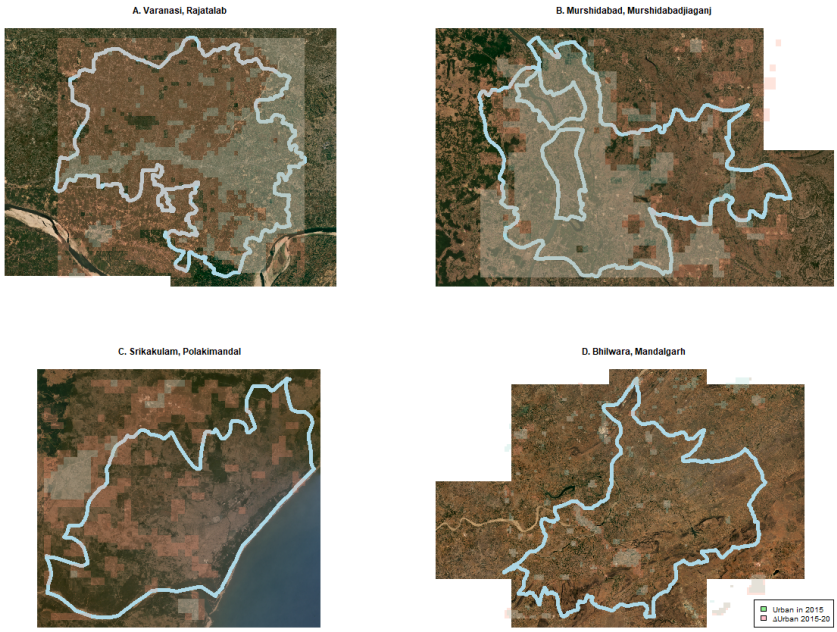
8 Figures and Tables

Figure 1: Bureaucrat Posting and Hometowns



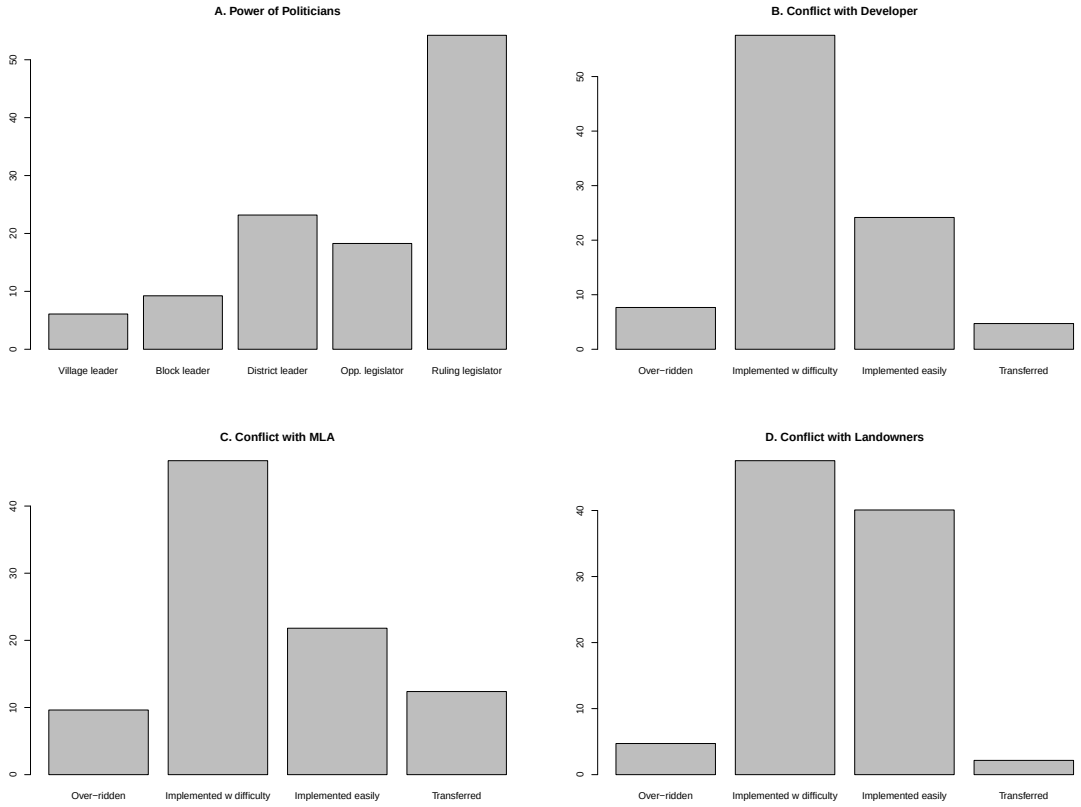
Map represents the location of current posting (red node) and hometown location (blude node), connected by line segment, of Tehsildars in sample. Hometown is defined as place where official completed his/her matriculation (in a small number of cases where this information was missing, we use the official's place of birth). Posting location is defined as centroid of Tehsil polygon. Black border represents district boundaries. Light blue border represents state boundaries.

Figure 2: Estimation of Urban Extent and Urban Change from Satellite Imagery



Images represent Tehsils polygons with a basemap comprised of high-resolution composite satellite imagery from the first quarter of 2021. Overlaid transperent pixels represent areas identified as urban from satellite imagery (those above a calibrated luminosity threshold in VIIRS night lights data). Light green pixels represent areas that were urbanized in 2015 and light red pixels represent areas of urban change (those that became urban between 2015 and 2020). Panel A represents a Tehsil with high levels of static urbanization as well as high levels of urban change. Panel B represents a Tehsil with high levels of static urbanization but low levels of urban change. Panel C represents a Tehsil with low levels of static urbanization and high levels of urban change. Panel D represent a Tehsil with low levels of static urbanization and low levels of urban change.

Figure 3: Sources of Political Pressure on the Land Bureaucracy



Panel A is share of Tehsildars who responding that the politician in question would prevail in a hypothetical dispute over the appropriate resolution of a land dispute. Panel B is distribution of responses to question: "A newly posted Tehsildar discovers significant encroachment on public land by local developers. The Tehsildar decides to try to halt construction of a costly new housing project and reclaim the project. What is likely to be the outcome of this scenario?". Panel C is distribution of responses to question: "State assembly elections have recently been completed, and the Tehsildar is under pressure from the newly elected local ruling party MLA to approve the mutation of agricultural land into land for development, though there is opposition from the local community. The Tehsildar decides not to approve the mutation. What is likely to be the outcome of this scenario?" Panel D is distribution of responses to question: "In one local village, the local panchayat leader has taken the side of a wealthy landowner in a land dispute. However, a poor villager comes to the Tehsildar to complain that his land has been illegally encroached upon by the wealthy landowner and requests that the Tehsildar intervenes. The Tehsildar finds merit in his claim and decides to rule in his favor. What is likely to be the outcome of this scenario?".

Figure 4: List Experiment: Share of Officials Experiencing Political Pressure on Land Deals

Control	Treatment
I am now going to give you a list of 4 statements. Please tell me HOW MANY of them are true for you. I don't want to know which ones, just HOW MANY: 1. I have incurred out-of pocket expenses as Tehsildar in the last 6 months. 2. I have worked past 9 pm in the last 6 months. 3. I have had to file an FIR against an employee in the last 6 months. 4. A computer in the office has broken down in the last 6 months. How many out of 4 apply?	*I am now going to give you a list of 5 statements. Please tell me HOW MANY of them are true for you. I don't want to know which ones, just HOW MANY:* 1. I have incurred out-of pocket expenses as Tehsildar in the last 6 months. 2. I have worked past 9 pm in the last 6 months. 3. I have encountered a politician that has exerted undue pressure on me to approve a land deal in the last 6 months. 4. I have had to file an FIR against an employee in the last 6 months. 5. A computer in the office has broken down in the last 6 months. How many out of 5 apply?
Mean: 2.38 (N=244)	Mean: 3.27(N=265)
Difference: 0.89 (SE=0.23)	

Unit of analysis is Tehsildar. Each Tehsildar was randomly presented with a list of statements and asked to report the aggregate number of statements that are true for him/her. The difference in reported counts in the treatment and control conditions represents the estimated share of officials that have experienced political pressure to approve a land deal in the last six months. Analysis estimated by OLS.

Table 1: Descriptive Statistics

	Mean	SD	Min	25th%	50th%	75th%	Max
Male	0.83						
Age	44.52	9.00	26.00	38.00	44.00	52.00	64.00
University Degree	0.91						
Exam-based Recruit	0.43						
Promotional Posting	0.47						
Monthly Salary (1000s Rs)	66.79	17.04	23.00	56.00	65.00	75.00	141.00
Years in Civil Service	16.75	11.56	1.00	7.00	13.00	26.00	55.00
Years in Current Post	1.89	1.57	0.00	1.00	1.00	2.00	16.00
Employees (#)	50.67	49.37	0.00	14.50	32.00	73.00	291.00
Technology Index	4.61	2.07	0.00	3.00	5.00	6.00	8.00
Amenities Likert	3.61	1.18	1.00	3.00	4.00	4.00	5.00
Distance from Home (km)	131.71	153.39	2.43	40.10	87.66	166.87	1060.49
Urban Change	12.06	15.58	-9.90	1.96	6.50	15.26	94.22
Urban Extent	30.58	29.64	0.00	6.49	19.14	49.85	100.00
Aligned (Politically)	0.6	0.4	0	0		1	1

Table reports descriptive statistics on the 509 Tehsildars/Tehsils in our sample. Male is indicator for male gender of Tehsildar. Age is age of Tehsildar. University degree is indicator for whether Tehsildar has at least a bachelors degree. Exam-based Recruit is indicator for entry into civil service through competitive examination (as opposed to promotion or lateral entry). Promotional posting is indicator for recruitment through promotion from lower tiers of bureaucracy. Monthly salary is salary in thousands of rupees. Years in Civil Service is number of years since employee joined the bureaucracy. Years in Current Post is the number of years that Tehsildar has been in current post/location. Employees is total number of full-time Tehsil employees as reported by Tehsildar. Technology Index is additive index of number of services offered online by Tehsil office from 0 to 8. Amenities Likert is 1-5 scale on how comfortable official currently in post report posting to be as a place to live for themselves and their family. Home distance is geodesic distance in kilometers from Tehsil centroid to coordinates of Tehsildar's hometown (where he or she completed matriculation). Urban Change is the percentage of land in Tehsil that has been converted from rural to urban based on nightlights satellite imagery in last 5 years. Urban extent is percentage of Tehsil land that is urban in 2020 based on nightlights satellite imagery.

Table 2: Official Prefernces Over Postings (District-level Ranking)

	Preference (Ranking Indicator)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Urban Change	0.003**							−0.002
	(0.001)							(0.001)
Urban Extent		0.004***						0.004***
		(0.001)						(0.001)
Staff			0.002***					0.001***
			(0.0004)					(0.0004)
Digitization				0.012				0.013*
				(0.008)				(0.008)
Amenities					0.066***			0.049***
					(0.010)			(0.010)
Proximity						0.001***		0.002***
						(0.0002)		(0.0004)
Aligned							−0.019	−0.031
							(0.032)	(0.030)
Constant	0.489***	0.486***	0.495***	0.494***	0.494***	0.494***	0.486***	0.484***
	(0.016)	(0.015)	(0.016)	(0.016)	(0.015)	(0.016)	(0.017)	(0.015)
Observations	1,210	1,210	1,200	1,210	1,204	1,210	1,106	1,097

Note: *p<0.1; **p<0.05; ***p<0.01

Unit of analysis is the bureaucrat-pairwise-post comparison, where each official was asked to rank three randomly sampled Tehsils (each included in the survey) within his/her district. Officials were also asked about the intensity of this preference with regards to their top and bottom choice (in terms of the salary boost required to switch posts). Outcome is salary-equivalent amount in rupees an official would be willing to pay/need to be compensated in order to exchange a given post (A) for another (B) in pairwise comparison. Explanatory variables are the difference in attributes between compared posting (Attribute(A)-Attribute(B)).Urban Extent is the difference between post A and post B in the percentage of land estimated to be urban. Urban Change is the the difference between post A and post B in corruption potential (value of land transactions estimated from satellite imagery by computing percentage of Tehsil land that has been converted from rural to urban between 2015 and 2020). Proximity is the difference between post A and post B in the geodesic distance of the Tehsil centroid to the official's hometown (place of matriculation) in kilometers. Amenities is the difference between post A and post B in a 5-point likert scale evaluation of the degree to which post is a comfortable place to live as evaluated by the official currently assigned to the post. Staff is the current total number of full-time employees in a Tehsil. Aligned is the difference between post A and post B in terms of political alignment to the ruling party in power. Analysis estimated by OLS. All analyses estimate standard errors adjusted for clustering across pairwise comparisons made by the same official.

Table 3: Official Prefernces Over Postings (District-level Ranking)

	Preference (Intensity Indicator)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Urban Change	70.9							−361.7*
	(191.5)							(205.9)
Urban Extent		303.4***						233.8**
		(88.7)						(96.4)
Staff			215.3***					145.5**
			(72.7)					(67.8)
Digitization				3,367.4*				3,259.3*
				(1,898.1)				(1,927.0)
Amenities					7,044.2***			5,229.9***
					(1,689.1)			(1,705.0)
Proximity						53.0		82.1
						(42.3)		(83.0)
Aligned							894.6	626.2
							(4,292.9)	(4,207.9)
Constant	−3,376.8	−3,566.2	−2,242.5	−2,908.7	−3,088.2	−3,414.1	−2,527.4	−1,508.3
	(2,731.0)	(2,676.6)	(2,706.5)	(2,698.0)	(2,642.8)	(2,716.4)	(2,844.2)	(2,816.2)
Observations	375	375	373	375	375	375	350	349

Note: *p<0.1; **p<0.05; ***p<0.01

SEs are clustered at the Tehsil Level

Unit of analysis is the bureaucrat-pairwise-post comparison, where each official was asked to rank three randomly sampled Tehsils (each included in the survey) within his/her district. Outcome is an indicator of whether a given post (A) was prefferred over another (B) in pairwise comparison. Explanatory variables are the difference in attributes between compared posting (Attribute(A)-Attribute(B)).Urban Extent is the difference between post A and post B in the percentage of land estimated to be urban. Urban Change is the the difference between post A and post B in corruption potential (value of land transactions estimated from satellite imagery by computing percentage of Tehsil land that has been converted from rural to urban between 2015 and 2020). Proximity is the difference between post A and post B in the geodesic distance of the Tehsil centroid to the official's hometown (place of matriculation) in kilometers. Amenities is the difference between post A and post B in a 5-point likert scale evaluation of the degree to which post is a comfortable place to live as evaluated by the official currently assigned to the post. Staff is the current total number of full-time employees in a Tehsil. Aligned is the difference between post A and post B in terms of political alignment to the ruling party in power. Analysis estimated by OLS. All analyses estimate standard errors adjusted for clustering across pairwise comparisons made by the same official.

Table 4: Official Prefernces Over Postings (State-level Ranking)

	Preference (Ranking Indicator)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Urban Change	0.003***							−0.0004
	(0.001)							(0.001)
Urban Extent		0.002***						0.001***
		(0.0003)						(0.0003)
Staff			0.001***					0.001***
			(0.0003)					(0.0003)
Digitization				0.003				−0.001
				(0.005)				(0.005)
Amenities					0.047***			0.033***
					(0.006)			(0.007)
Proximity						0.0005***		0.001***
						(0.0001)		(0.0001)
Aligned							−0.040**	0.002
							(0.019)	(0.019)
Constant	0.552***	0.548***	0.559***	0.557***	0.558***	0.559***	0.552***	0.541***
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Observations	3,120	3,120	3,111	3,120	3,120	3,120	2,912	2,912

Note: *p<0.1; **p<0.05; ***p<0.01

Unit of analysis is Tehsil pairwise comparison. Each official was presented with up to 5 potential postings across districts in his/her state asked to rank them in terms of preferences, producing up to 10 pairwise comparisons. Explanatory variables are the difference in attributes between compared postings (e.g. Attribute_A-Attribute_B)Urban Extent is the difference between post A and post B in the percentage of land estimated to be urban. Urban Change is the the difference between post A and post B in corruption potential (value of land transactions estimated from satellite imagery by computing percentage of Tehsil land that has been converted from rural to urban between 2015 and 2020). Proximity is the difference between post A and post B in the geodesic distance of the Tehsil centroid to the official's hometown (place of matriculation) in kilometers. Amenities is the difference between post A and post B in a 5-point likert scale evaluation of the degree to which post is a comfortable place as evaluated by the official currently assigned to the post. Staff is the current total number of full-time employees in a Tehsil. Aligned is the difference between post A and post B in terms of political alignment to the ruling party in power.Analysis estimated by OLS. All analyses estimate standard errors adjusted for clustering across pairwise comparisons made by the same official.

Table 5: Official Prefernces Over Postings (State-level Ranking)

	Preference (Intensity Indicator)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Urban Change	426.1**							−171.0
	(190.1)							(244.9)
Urban Extent		396.9***						308.0***
		(88.8)						(110.8)
Staff			188.2**					133.0
			(80.5)					(85.2)
Digitization				924.9				644.4
				(1,481.2)				(1,436.6)
Amenities					9,392.0***			5,932.0**
					(2,319.7)			(2,665.7)
Proximity						70.6***		73.6***
						(13.7)		(14.5)
Aligned							−670.2	5,723.3
							(4,539.9)	(4,839.7)
Constant	5,795.7*	5,944.6*	5,878.5*	6,390.4*	6,193.6**	4,695.6	6,092.1*	5,130.6*
	(3,144.4)	(3,048.5)	(3,165.1)	(3,275.9)	(3,033.9)	(3,075.0)	(3,258.1)	(2,987.3)
Observations	265	265	265	265	265	265	256	256

Note: *p<0.1; **p<0.05; ***p<0.01

SEs are clustered at the Tehsil Level

Unit of analysis is Tehsil pairwise comparison. Each official was presented with up to 5 potential postings across districts in his/her state asked to rank them in terms of preferences, producing up to 10 pairwise comparisons. Additionally, each official was asked how much of a salary increase he/she would require to voluntarily exchange his/her top-ranked post for the bottom-ranked post. Outcome is salary-equivalent amount in rupees an official would be willing to pay/need to be compensated in order to exchange a given post (A) for another (B) in pairwise comparison.. Explanatory variables are the difference in attributes between compared postings (e.g. Attribute_A-Attribute_B)Urban Extent is the difference between post A and post B in the percentage of land estimated to be urban. Urban Change is the the difference between post A and post B in corruption potential (value of land transactions estimated from satellite imagery by computing percentage of Tehsil land that has been converted from rural to urban between 2015 and 2020). Proximity is the difference between post A and post B in the geodesic distance of the Tehsil centroid to the official's hometown (place of matriculation) in kilometers. Amenities is the difference between post A and post B in a 5-point likert scale evaluation of the degree to which post is a comfortable place as evaluated by the official currently assigned to the post. Staff is the current total number of full-time employees in a Tehsil. Aligned is the difference between post A and post B in terms of political alignment to the ruling party in power.Analysis estimated by OLS. All analyses estimate standard errors adjusted for clustering across pairwise comparisons made by the same official.

Table 6: Survey Experiment 1

	Preference Measure	
	Choice (Binary)	Intensity(Rupees)
	(1)	(2)
Comfortable Posting (Healthcare/Schools)	0.37***	26,729.38***
	(0.03)	(3,637.99)
Proximity to City	0.16***	12,089.23***
	(0.03)	(3,869.51)
Constant	0.24***	−19,262.54***
	(0.02)	(2,592.78)
Observations	1,018	928
Note:	SEs are clustered within official	

Unit of observation is pairwise choice set (between two hypothetical postings, each with two randomized attributes). Coefficients on "high" attribute condition are reported (relative to omitted "low" condition baseline). Respondents were asked to both indicate their preferred choice as well as the intensity of this preference (in terms of the salary boost required to switch posts).Survey experiment randomly assigned one attribute intended to serve as a proxy for a high or low comfort posting (Healthcare/Schools) and one attribute intended to serve as a proxy for a high or low corruption potential posting (Proximity to City). Analysis estimated by OLS. All analyses estimate standard errors adjusted for clustering within official

Table 7: Survey Experiment 2

	Preference Measure	
	Choice (Binary)	Intensity(Rupees)
	(1)	(2)
Comfortable Posting (Amenities)	0.39***	31,329.70***
	(0.03)	(3,874.22)
Agricultural Productivity	0.23***	21,572.31***
	(0.03)	(3,871.60)
Constant	0.19***	−26,413.90***
	(0.02)	(3,042.76)
Observations	1,018	914
Note:		*p<0.1; **p<0.05; ***p<0.01
		SEs are clustered within official

Unit of observation is pairwise choice set (between two hypothetical postings, each with two randomized attributes). Coefficients on "high" attribute condition are reported (relative to omitted "low" condition baseline). Respondents were asked to both indicate their preferred choice as well as the intensity of this preference (in terms of the salary boost required to switch posts).Survey experiment randomly assigned one attribute intended to serve as a proxy for a high or low comfort posting (Amenities in the form of Resources/staffing) and one attribute intended to serve as a proxy for a high or low corruption potential posting (Agricultural productivity). Analysis estimated by OLS. All analyses estimate standard errors adjusted for clustering within official

Table 8: Survey Experiment 3

	Preference Measure	
	Choice (Binary)	Intensity(Rupees)
	(1)	(2)
Comfortable Posting (Connectivity)	0.36***	32,371.21***
	(0.03)	(4,226.57)
Paper Records	0.27***	21,390.91***
	(0.03)	(3,619.09)
Constant	0.18***	−26,793.57***
	(0.02)	(2,821.44)
Observations	1,018	898

Note: *p<0.1; **p<0.05; ***p<0.01
SEs are clustered within official

Unit of observation is pairwise choice set (between two hypothetical postings, each with two randomized attributes). Coefficients on "high" attribute condition are reported (relative to omitted "low" condition baseline). Respondents were asked to both indicate their preferred choice as well as the intensity of this preference (in terms of the salary boost required to switch posts).Survey experiment randomly assigned one attribute intended to serve as a proxy for a high or low comfort posting (Road/rail connectivity) and one attribute intended to serve as a proxy for a high or low corruption potential posting (Paper records). Analysis estimated by OLS. All analyses estimate standard errors adjusted for clustering within official

Table 9: Strategic Allocation of Officers

	Dependent Variable				
	Distance (geodesic)	Distance (driving)	Distance (time)	Non-exam recruit	Years in Service
	(1)	(2)	(3)	(4)	(5)
Urban Change	−2.109***	−2.938***	−0.055***	0.004**	0.013
	(0.563)	(0.800)	(0.015)	(0.002)	(0.043)
State FE	Yes	Yes	Yes	Yes	Yes
Observations	495	487	487	509	504

Note: *p<0.1; **p<0.05; ***p<0.01

Unit of observation is Tehsil. Urban Change proxies corruption potential, which is the value of land transactions estimated from satellite imagery by computing percentage of Tehsil land that has been converted from rural to urban between 2015 and 2020. Distance measures computed between hometown of official and Tehsil centroid using Google Maps API. Non-exam recruitment takes a value of one if official was recruited through promotion from lower tiers of bureaucracy as opposed to through examinations. All specifications include state fixed effects. Analysis estimated by OLS

Table 10: Official Prefernces Over Postings (State-level Ranking)

	Preference (Ranking Indicator)			
	(1)	(2)	(3)	(4)
Urban Change	−0.0004	0.0004	0.0005	0.0004
	(0.001)	(0.001)	(0.001)	(0.001)
Urban Extent	0.001***	0.002***	0.002***	0.002***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Staff	0.001***	0.001***	0.001***	0.001***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Digitization	−0.001	0.004	0.004	0.004
	(0.005)	(0.005)	(0.005)	(0.005)
Amenities	0.033***	0.028***	0.028***	0.028***
	(0.007)	(0.008)	(0.008)	(0.008)
Proximity	0.001***	0.001***	0.001***	0.001***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Aligned	0.002	0.001	0.0004	0.001
	(0.019)	(0.021)	(0.022)	(0.021)
Constant	0.541***			
	(0.012)			
State FE	No	Yes	No	No
State FE	No	No	Yes	No
Tehsil FE	No	No	No	Yes
Observations	2,912	2,912	2,912	2,912
R^2	0.123	0.148	0.241	0.323
Adjusted R^2	0.121	0.141	0.205	0.221
Residual Std. Error	0.466	0.461	0.443	0.438

Note: *p<0.1; **p<0.05; ***p<0.01

The Table replicates the results of the OLS regression with Fixed Effects at the State District and the Tehsil level. As the results show the significant of factors like Amenities, Overall Level of Urbanization, Staffing, and Proximity does not change when Fixed Effects are introduced. Similarly Corruption proxied by the change in urbanization and alignment and politicial alignment of Tehsils remain insigificant in all the specifications.

8.1 Validating Urban Change

The paper has focused on the political economy of corruption in land deals in rapidly urbanizing jurisdictions. We have argued that the role of the Tehsildar within the political economy of corruption related to land deals is best measured by focusing on jurisdictions that experience rapid urbanization. In this section, we provide two sets of evidence to justify our assumptions. First, we have looked at administrative orders and laws governing land transactions in urban areas. We find that in historically urban jurisdictions Tehsildar does have the sole veto power and has to work with urban local bodies. We argue that this limits the ability of the politician to leverage the Tehsildar for rent-seeking (There are other ways in which corruption in urban land markets works, which are not covered in this paper). Thus focussing on regions that are rapidly urbanizing makes theoretical sense. Second, in order to validate the satellite measure of the rate of urbanization we compare our measure against administration data on land transactions. We use the administrative data from the State of Odisha - which made the data on the number of land transactions related to changes in agricultural land usage for commercial purposes. As the figures below show there is a high overlap between changes in night light luminosity between 2015 and 2020 and the volume of requests for converting agricultural land for commercial use.

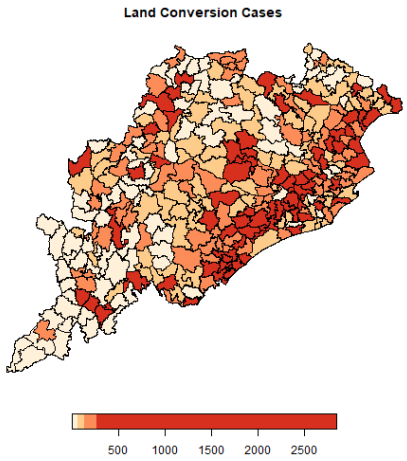


Figure 5: Number of Cases Across Tehsils for Land Conversion

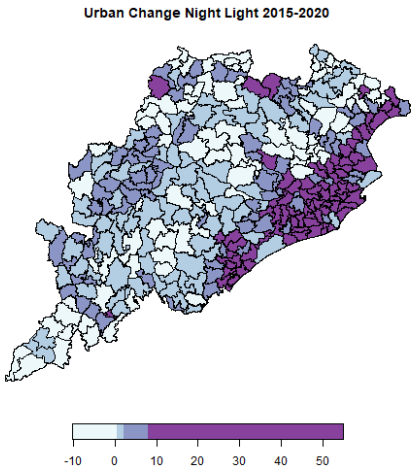


Figure 6: Change in NL across Tehsils from 2015-2010

References

Y. Y. Ang. *China's gilded age: The paradox of economic boom and vast corruption*. Cambridge University Press, 2020.

A. V. Banerjee, E. Duflo, and R. Glennerster. Putting a band-aid on a corpse: incentives for nurses in the Indian public health care system. *Journal of the European Economic Association*, 6(2-3):487–500, 2008. Publisher: Oxford University Press.

R. Banerjee, T. Baul, and T. Rosenblat. On self selection of the corrupt into the public sector. *Economics Letters*, 127:43–46, 2015. Publisher: Elsevier.

S. Banuri and P. Keefer. Intrinsic motivation, effort and the call to public service. *World Bank Policy research working paper*, (6729), 2013.

A. Bergeron, P. Bessone, J. K. Kabeya, G. Tourek, and J. Weigel. Optimal Assignment of Bureaucrats: Evidence from Randomly Assigned Tax Collectors in the DRC. 2021. Publisher: CEPR Discussion Paper No. DP16771.

T. Beteille. *Absenteeism, transfers and patronage: the political economy of teacher labor markets in India*. Stanford University, 2009.

R. R. Bhavnani and A. Lee. Local embeddedness and bureaucratic performance: evidence from India. *The Journal of Politics*, 80(1):71–87, 2018. Publisher: University of Chicago Press Chicago, IL.

S. Brierley. Unprincipled principals: Co-opted bureaucrats and corruption in Ghana. *American Journal of Political Science*, 64(2):209–222, 2020. Publisher: Wiley Online Library.

M. J. Callen, S. Gulzar, S. A. Hasanain, and M. Y. Khan. The political economy of public employee absence: Experimental evidence from Pakistan. *Available at SSRN 2316245*, 2013.

R. L. Calvert, M. D. McCubbins, and B. R. Weingast. A theory of political control and agency discretion. *American journal of political science*, pages 588–611, 1989. Publisher: JSTOR.

D. Carpenter. *The forging of bureaucratic autonomy*. Princeton University Press, 2020.

D. Carpenter and D. A. Moss. *Preventing Regulatory Capture: Special Interest Influence and How to Limit it*. Cambridge University Press, Oct. 2013. ISBN 978-1-107-51252-8. Google-Books-ID: TV3BAgAAQBAJ.

E. Cowley and S. Smith. Motivation and mission in the public sector: Evidence from the World Values Survey. *Theory and decision*, 76(2):241–263, 2014. Publisher: Springer.

J. Crabtree. *The billionaire raj: A journey through India's new gilded age*. Tim Duggan Books, 2019.

P. E. Crewson. Public-service motivation: Building empirical evidence of incidence and effect. *Journal of public administration research and theory*, 7(4):499–518, 1997. Publisher: Oxford University Press.

E. Dal Bo. Regulatory capture: A review. *Oxford review of economic policy*, 22(2): 203–225, 2006. Publisher: Oxford University Press.

A. Dasgupta and D. Kapur. The political economy of bureaucratic overload: Evidence from rural development officials in India. *American Political Science Review*, 114(4):1316–1334, 2020. Publisher: Cambridge University Press.

F. De Zwart. *The Bureaucratic Merry-go-round: Manipulating the transfer of Indian civil servants*. Leiden University Press, 1994.

M. Dewatripont, I. Jewitt, and J. Tirole. The economics of career concerns, part II: Application to missions and accountability of government agencies. *The Review of Economic Studies*, 66(1):199–217, 1999. Publisher: Wiley-Blackwell.

C. D. Elvidge, K. Baugh, M. Zhizhin, F. C. Hsu, and T. Ghosh. VIIRS night-time lights. *International Journal of Remote Sensing*, 38(21):5860–5879, 2017. Publisher: Taylor & Francis.

P. B. Evans. Embedded autonomy. In *Embedded Autonomy*. Princeton University Press, 2012.

F. Finan, B. A. Olken, and R. Pande. Chapter 6 - The Personnel Economics of the Developing State. In A. V. Banerjee and E. Duflo, editors, *Handbook of Economic Field Experiments*, volume 2 of *Handbook of Economic Field Experiments*, pages 467–514. North-Holland, Jan. 2017. 10.1016/bs.hefe.2016.08.001. URL `http://www.sciencedirect.com/science/article/pii/S2214658X16300034`.

A. Gupta. *Red tape: Bureaucracy, structural violence, and poverty in India*. Duke University Press, 2012.

R. Hanna and S.-Y. Wang. Dishonesty and selection into public service: Evidence from India. *American Economic Journal: Economic Policy*, 9(3):262–90, 2017.

B. Harriss-White and L. Michelutti. *The Wild East: Criminal Political Economies in South Asia*. UCL Press, 2019.

M. Hassan. *Regime Threats and State Solutions: Bureaucratic Loyalty and Embeddedness in Kenya*. Cambridge University Press, 2020.

L. Iyer and A. Mani. Traveling Agents: Political Change and Bureaucratic Turnover in India. *Review of Economics and Statistics*, 94(3):723–739, Jan. 2011. ISSN 0034-6535. 10.1162/REST_a_00183. URL http://dx.doi.org/10.1162/REST_a_00183.

D. Kapur and M. Vaishnav. Quid pro quo: Builders, politicians, and election finance in India. *Center for Global Development Working Paper*, (276), 2013.

A. Q. Khan, A. I. Khwaja, and B. A. Olken. Making moves matter: Experimental evidence on incentivizing bureaucrats through performance-based postings. *American Economic Review*, 109(1):237–70, 2019.

A. Kohli. *Poverty amid plenty in the new India*. cambridge university Press, 2012.

C. Leaver. Bureaucratic minimal squawk behavior: Theory and evidence from regulatory agencies. *American Economic Review*, 99(3):572–607, 2009.

M. Levien. *Dispossession without development: Land grabs in neoliberal India*. Oxford University Press, 2018.

K. Mangal. How Much is a Government Job in India Worth? 2021.

R. A. Posner. What do judges and justices maximize?(The same thing everybody else does). *Supreme Court Economic Review*, 3:1–41, 1993. Publisher: George Mason University Press.

C. Prendergast. The motivation and bias of bureaucrats. *American Economic Review*, 97(1):180–196, 2007.

T. C. Schelling. *Micromotives and macrobehavior*. WW Norton & Company, 2006.

A. Shleifer and R. W. Vishny. Corruption. *The quarterly journal of economics*, 108 (3):599–617, 1993. Publisher: MIT Press.

G. J. Stigler. The theory of economic regulation. In *The Political Economy*, pages 67–81. Routledge, 2021.

N. Sud. Governing India's Land. *World Development*, 60:43–56, Aug. 2014. ISSN 0305-750X. 10.1016/j.worlddev.2014.03.015. URL https://www.sciencedirect.com/science/article/pii/S0305750X14000813.

M. Vaishnav. *When crime pays: Money and muscle in Indian politics*. Yale University Press, 2017.

R. Wade. The system of administrative and political corruption: Canal irrigation in South India. *The Journal of Development Studies*, 18(3):287–328, 1982. Publisher: Taylor & Francis.

R. Wade. The market for public office: Why the Indian state is not better at development. *World Development*, 13(4):467–497, Apr. 1985. ISSN 0305-750X. 10.1016/0305-750X(85)90052-X. URL http://www.sciencedirect.com/science/article/pii/0305750X8590052X.

M. Weber. *Max Weber's complete writings on academic and political vocations*. Algora publishing, 2008.

L. Weinstein. Mumbai's development mafias: globalization, organized crime and land development. *International journal of urban and regional research*, 32(1): 22–39, 2008. Publisher: Wiley Online Library.

J. Q. Wilson. *Bureaucracy: What government agencies do and why they do it*. Hachette UK, 2019.