Traveling Agents: Political Change and Bureaucratic Turnover in India*

Lakshmi Iyer[†]   Anandi Mani[‡]

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Abstract

We develop a framework to examine how politicians with short-term electoral pressures control bureaucrats with long-term career concerns. Empirical analysis using a unique data set on the career histories of Indian bureaucrats supports the key predictions of our framework. We find that politicians use frequent reassignments (transfers) across posts of varying importance as a means of control. High-skilled bureaucrats face less frequent transfers and a lower variability in the importance of their posts. There are alternative routes to career success: officers of higher initial ability are more likely to invest in developing expertise, but officers who belong to the same caste as the politician are also able to obtain important posts. Bureaucrats are less likely to be transferred if politicians have alternative means of control through subordinate politicians. Districts with higher rates of politically induced bureaucrat transfers are somewhat less successful in poverty reduction over the long run.

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[†]Harvard Business School. Email: liyer@hbs.edu

[‡]University of Warwick. Email: A.Mani@warwick.ac.uk

1 Introduction

Politicians and bureaucrats are two important pillars of governance, but while politicians are motivated by short-term electoral pressures, bureaucrats are driven by long-term career concerns. This difference in the nature of their incentives is deliberate and is constitutionally provided for in most cases. In this context, we address two important questions in this paper: how do politicians facing short term electoral pressures control bureaucrats with low-powered incentives? In turn, how do bureaucrats respond to these incentives? We develop a simple framework to address these issues, and use a unique data set on the bureaucracy in India to shed empirical light on them. We also discuss the theoretical implications of this interaction for public good outcomes and provide some empirical evidence on them. As Dixit (2008) has strongly argued, such detailed analysis of the internal structure of the "organization that makes and implements public policies" greatly enhances our understanding of government and policy-making.

The literature on career concerns provides normative reasons for bureaucrats to face low-powered incentives and be insulated from political pressures. Holmstrom and Milgrom (1991) and Dewatripont, Jewitt and Tirole (1999) discuss how the multi-task nature of bureaucrats' jobs warrant the use of low-powered incentives in the public sector. Maskin and Tirole (2004) make the case that an independent bureaucracy insulated from political pressures is necessary to guard against excesses of "pandering" by elected politicians with short-term horizons. Their argument is likely to be stronger in developing countries, with a politically less sophisticated and less empowered electorate. Several countries, including India, afford significant insulation from political pressures to the bureaucracy, by constitutional design.

Given such constitutional constraints, how do politicians deal with the problem of motivating such protected bureaucrats to work as they would like them to? A recent literature in economics proposes a few alternative channels to achieve this goal. Alesina and Tabellini (2007) point out that one response of the politician is to be selective in which tasks he delegates.[1] Besley and Ghatak (2005) and Prendergast (2007) consider the case for motivated agents and the use of non-monetary incentives in a public service context. Mueller (2007) examines how politicians can control the type of bureaucrats hired, through systems of patronage or meritocracy.

Our paper contributes to this literature in three significant ways. First, we examine a different way for the politician to retain control: being selective in the type of bureaucrat he

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[1] See Calvert and Weingast (1989) and Epstein and O'Halloran (1999) for a related "transactions cost" approach to delegation of authority by politicians to bureaucrats.

delegates authority to, for various tasks. Second, we endogenize bureaucrats' response to the politician's delegation strategies in a career concerns framework. Most importantly, we provide empirical evidence on both the politician's and the bureaucrats' strategies, using a detailed data set on the entire career histories of bureaucrats in the Indian Administrative Service.

In keeping with the institutional reality in India and many other countries, our framework assumes that the politician principal lacks access to the standard incentive mechanisms to motivate bureaucrat agents. State-level politicians in India lack the power to recruit, dismiss, demote or change the wages of centrally appointed bureaucrats. The politician cares about having control over bureaucrats' actions, while bureaucrats themselves care about the prestige and importance of the posts they are assigned to. The politician therefore uses assignment across posts of varying importance as a means to control bureaucrats' actions. Junior bureaucrats respond to these incentives either by developing a reputation for expertise or a reputation for loyalty to specific politicians, both of which are viable means of securing important positions.

Our framework generates several testable hypotheses. First, if the electorate cares not just about efficiency, but also about redistribution issues, political change will result in reassignments (transfers) of bureaucrats across posts. Second, junior bureaucrats with high initial ability are more likely to invest in developing expertise as their route to career success. Third, such high-skilled bureaucrats are less likely to be reassigned to new posts as a result of political turnover than bureaucrats who develop a reputation for loyalty to particular politicians. Fourth, these high-skilled officers will experience less variability in the importance of their posts following a political change, relative to loyal bureaucrats. In other words, bureaucrats who develop a reputation for loyalty are more likely to experience a move from an important post to an unimportant post, and vice versa. Fifth, political change is less likely to result in bureaucratic turnover if alternative means of control, such as subordinate politicians, are available.

We test these hypotheses empirically using a unique data set on the complete career histories of over 4000 officers in the Indian Administrative Service (IAS) between 1980 and 2004. We also collected data on political changes in major Indian states over the same period, measures of bureaucrats' ability both at the initial stage of their career as well as at a later stage, and a measure of the relative importance of different posts as viewed by bureaucrats themselves.

Our empirical results confirm the implications of our theoretical framework. We find that politicians use frequent transfer (reassignment) of officers across posts to control bureaucrats. A change in the identity of a state's Chief Minister results in a significant increase in the probability

of bureaucrat reassignments in that state.[2] Such "politicization" of the bureaucracy has become an important public policy issue in India, where a Public Services Bill has been proposed to limit politicians' influence on bureaucrat reassignments. We also find that officers with higher initial ability are much less likely to be transferred when a new politician takes office, and less likely to experience variation in the importance of the posts they are assigned to. This provides greater support to our interpretation that such bureaucrat reassignment is a means for the politician to control bureaucrats.

Consistent with the nature of career concerns of bureaucrats in our model, we find that officers with high initial ability are more likely to be recommended for senior positions in the Central Government, suggesting that they have developed a greater reputation for expertise. However, they are no more likely to be assigned to important posts over their entire career than other (loyal) officers. This finding is very interesting because it confirms the model's view that officers can take alternative routes to success – investing in a reputation for expertise is not the only one. Further evidence for alternative routes to success is provided by the fact that officers who belong to the same caste as the Chief Minister's party base are more likely to be appointed to important positions than other officers.[3]

The presence of subordinate politicians at the district level provides an alternative way for the Chief Minister to control bureaucrat outcomes at the district level. We find that the Chief Minister is significantly less likely to transfer District Officers in districts where the local politicians belong to his political party. Further, a political change results in district bureaucrat transfers only when the party in power changes. This last finding allows us to ascertain that political control is a strong motivation for district officer transfers by a new Chief Minister. Unlike the case of a new CEO bringing in his own team, they are not driven by considerations of the efficiency of the "match" between the bureaucrats and the new Chief Minister alone. The selective pattern of District Officer transfers suggests that the Chief Minister regards local politicians and bureaucrats are "substitutes" for exerting his influence at the district level.

An implication of such selective reassignments is that outcomes in districts with a lower frequency of politically induced transfers will not be worse than in districts with a higher fre-

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[2]The Chief Minister is the de facto executive head of the state government. In India's parliamentary democracy, he is usually the leader of the party which wins the largest number of seats in the state election.

[3]This finding is based on results for the officers from the state of Uttar Pradesh in the 1990s, where caste-based parties have become politically powerful and ethnic identity has become an important dimension of voting behavior (Chandra (2004), Banerjee and Pande (2007)).

quency of politically induced transfers, and may even be better. We find that districts with fewer political transfers are not worse off in terms of specific outcomes such as road construction and immunization, and in fact fare better on a more comprehensive measure of long-term poverty reduction.

Previous empirical work on the bureaucracy in developed countries has focused on whether appointed officials with lower-powered incentives make systematically different decisions than elected ones (Besley and Coate (2003), Besley and Payne (2003), Weingast and Moran (1983)). In the context of developing countries, Bardhan and Mookherjee (1998) model the implications of delegating authority to bureaucrats versus local politicians. The empirical literature on developing countries has mostly focused on issues of bureaucrat performance. Rauch and Evans (2000) conduct a cross-country study of how the structure of the bureaucracy affects its perceived efficiency, while Wade (1982), de Zwart (1994), Potter (1996) and Das (2001) offer descriptive accounts of the Indian bureaucracy. An exception is Park and Somanathan (2004), who explicitly consider the relationship between politicians and bureaucrats using data on Korean public prosecutors.

The rest of the paper is structured as follows: Section 2 describes the characteristics of the Indian Administrative Service and the political setting in India, and Section 3 sets up our theoretical framework. Section 4 describes our data, Sections 5 and 6 present our empirical results, and Section 7 concludes.

2 Bureaucrats and Politicians in India

2.1 The Indian Administrative Service

The Indian Administrative Service (IAS) is the top layer of the government bureaucracy in India. This service consists of a relatively small number of career civil servants: in 2005, there were less than 5000 officers administering a population of over 1 billion.[4] Lower levels of administration are staffed by members of State Civil Services. IAS bureaucrats staff the most important positions in district administration, state and central government secretariats, and state-owned enterprises. Each district is under the supervision of a District Officer, who is responsible for ensuring law and order, providing certain judicial functions, organizing relief and rehabilitation in cases of natural disasters, implementing development policies and overseeing all aspects of district administration.

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[4]To have an idea of the overall size of the state in India, we should note that the central government of India employed more than 3.8 million people in 2000 (41% of whom were employed in the Indian Railways), and central government expenditure accounted for 19% of India's GDP in 2005.

These officers are variously known as District Collectors, District Magistrates and Deputy Commissioners in different parts of India. These are positions of considerable importance: the median population of a district in 2001 was 1.5 million people, and District Officers frequently administer budgets of the order of $2 million.[5]

IAS officers are career civil servants, and political neutrality is a requirement of their position. For instance, IAS officers cannot join political parties or be involved in any political events. On the other side, politicians are not involved in the hiring process of IAS officers. Recruitment is either through nationwide competitive examinations conducted by an independent Commission ("direct recruits"), or by promotion of the best-performing officers from the lower State Civil Services ("SCS promotees"), the latter category being restricted to not more than one-third of officers in a state.[6]

After recruitment and initial training, direct recruits are assigned to specific state cadres, where they typically spend most of their careers. This assignment of officers to states is done by a rigid (rather complicated) bureaucratic rule, resulting in a quasi-random assignment of officers to states. In particular, it is very difficult for elected politicians or the bureaucrats themselves to affect this assignment.[7] Not more than one-third of the direct recruits assigned to a state can be natives of that state.

The Constitution of India provides IAS officers considerable immunity from state-level politicians by stipulating that an IAS officer "holds office during the pleasure of the President," and cannot be "dismissed or removed by an authority subordinate to that by which he was appointed" (Articles 310 and 311). This means that IAS officers cannot be dismissed or demoted by state-level elected representatives.

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[5]Several officers have mentioned that moving from a District Officer position to a higher level post in the state secretariat often resulted in a decreased breadth of responsibility.

[6]Nearly 50% of all posts are reserved for members of historically disadvantaged sections of society: 15% for Scheduled Castes, 7.5% for Scheduled Tribes and, since 1992, 27% for Other Backward Castes.

[7]Broadly, the assignment rule is as follows: each state is first assigned an officer who is from that state, then two officers from other states. A recruit can specify whether he wants to be assigned to his home state or not. Even if he expresses the desire to go to his home state, it may not happen if the state in question does not need any more officers, if the previous officer to go to the state was from that state, if the reservation criteria for the disadvantaged sections of society have to be satisfied, and if too many top-ranked officers have already been assigned to that state. An officer who is not assigned to his home state is assigned to the next available state in alphabetical order.

2.2 Bureaucrat Careers

IAS officers start by holding positions at the sub-district level, and move on to higher positions within the district, the state secretariat or state-owned enterprises. Officers are usually appointed as District Officers after attaining five to ten years of experience (this varies by state). Promotions are based on years of service for the first few years, and have a merit-based component for the higher level positions. IAS officers are evaluated by their superior officers in Annual Confidential Reports. Recently, the Ministry of Personnel has initiated Performance Appraisal Reports under which officers will be assigned numerical grades for their work output and completion of work plans, personal attributes and functional competencies. Such work plans could include quantitative targets, but this is not necessary. Wages and salaries are set by independent Pay Commissions, and are determined by the bureaucrat's rank within the hierarchy.

IAS officers are subject to a comprehensive career review approximately twenty years after they join the service. This review is conducted by senior bureaucrats, who decide whether the officer is eligible to hold positions of Joint Secretary and higher in the central government at New Delhi; such positions are usually considered very prestigious. The selected officers are put on a panel from which they can be selected for such positions, as and when the need arises in the central government. This process is called "empanelment" and being "empaneled" is widely regarded as a signal of superior competence within the bureaucracy.

2.3 India's Political System

India is a parliamentary democracy in which elections are held every five years, both for the central government in New Delhi and for the 28 states that constitute the Indian Union. The head of the state executive is the Governor, who acts on the advice of the Chief Minister and the Council of Ministers. The Chief Minister is usually the leader of the party which wins a majority of seats in the state legislature (similar to the Prime Minister at the national level). If the current Chief Minister loses the support of his party (due to internal party politics), or the parties in a coalition government fall apart, efforts are made to form another government, either by choosing a new leader from the same party, or by putting together another coalition.[8] If these efforts fail, the

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[8]For instance, in August 2004, Babulal Gaur replaced Uma Bharati in Madhya Pradesh because of the latter's loss of support within the state level Bharatiya Janata Party (BJP). In another instance, the BJP withdrew from the governing coalition in Uttar Pradesh in 2003, with the result that Mayawati (of the Bahujan Samaj Party) was replaced by Mulayam Singh Yadav (of the Samajwadi Party) as Chief Minister.

central government often steps in to declare "President's Rule" in the state. In such a situation, the administration of the state is brought under the central government until new elections are held and a new government can take over. The election calendar resets to a five-year one after any such midterm poll. Differing incidence of midterm polls across states has now resulted in states' calendars being different from each other and from the national election calendar. For instance, the last national elections were in 2004, but five states had state elections in 2006.

2.4   Transfers of IAS Bureaucrats

As described in section 2.2, IAS officers cannot be hired or fired by state-level politicians. However, officers can be reassigned or transferred from one post to another. Such transfer orders are signed by the Chief Secretary (the top bureaucrat) who reports directly to the Chief Minister of the state. While bureaucrats can request specific assignments, they have very little power to affect the outcome of such requests. These transfers are almost always within the state, or sometimes between the state and central governments; transfers across states are extremely rare.

In our data, we find that IAS bureaucrats are indeed transferred extremely frequently: over the period 1980-2004, the probability that an officer experiences a transfer in a given year is 49% (Table 1, Panel A2). The average tenure of IAS officers in a given post is about 16 months and only 56% of District Officers spend more than one year in their jobs. This is in violation of the recommendations, put forward by the Ministry of Personnel and the Fifth Pay Commission, for a three-to-five year tenure in each post. There is noticeable cross-state variation in transfer probabilities, ranging from a low of 41% for West Bengal to a high of 52% for the state of Uttar Pradesh (Figure 1).

Interestingly, frequent transfers of bureaucrats has been a long-standing feature of the Indian bureaucracy. For instance, using data from the British colonial period, Potter (1996) finds that two-thirds of all District Officers in 1936 had held their posts for less than one year. Gilmour (2005, p 220) provides a vivid example from an even earlier period: "...between 1879 and 1885 Colonel Tweedie did three stints in Gwalior, two in Baghdad, two in Ajmer, one in Jodhpur, one on the road between Peshawar and Kabul as Political Officer during the invasion of Afghanistan, and another as Political Officer in charge of Jalalabad."

In recent years, there are concerns in India that frequent transfers have become a tool of "political interference" i.e. driven by politicians wanting to exert control over bureaucrats. Consistent with these concerns about political influence on bureaucrat transfers, we find that the

average rate of bureaucrat transfers in a state increases significantly when there is a politician change in that state. Figure 2 shows the average state-level transfers over time for the state of Tamil Nadu, with the vertical lines representing dates when there was a change in the Chief Minister of the state. We see that a change in the politician in power is associated with an increase in the transfer probability in that state. The corresponding graphs for the other states show very similar trends.

Such alleged politicization of the bureaucracy has become a major public policy issue in India. For instance, the present Prime Minister Dr. Manmohan Singh expressed grave concern about this, warning that the failure of the government to tackle the menace of the "transfer and posting industry" will have a "debilitating impact not only on their performance and morale but also on the whole process of governance."[9] Several other scholars and public figures have voiced similar concerns, including the former Election Commissioner of India, Mr. Lyngdoh. A Public Services Bill currently exists in draft form, which proposes explicit limits on the political executive's ability to transfer bureaucrats before they complete two years of service.[10] However, politicians seem to value the ability to reassign bureaucrats frequently. During initial consultations regarding the Bill, only eleven states agreed to have a minimum two-year tenure for District Officers, and ten states refused outright.

In the next section, we develop a framework to understand the possible motivations that politicians may have in making bureaucrat assignments. This framework generates some testable implications which we then take to the data.

3 Political Change and Bureaucrat Assignments: A Theoretical Framework

We model the key elements of the interaction between politicians and bureaucrats in a very simple framework. In keeping with the Indian setting, we assume that politicians do not have access to the standard incentive mechanisms, such as hiring and firing officers, or changing their wages. Our model has three key building blocks: (i) the politician seeks to control or appropriate bureaucrats' output for his own ends, (ii) bureaucrats care about the prestige and importance of their jobs and (iii) junior bureaucrats can invest either in expertise on in loyalty to a specific politician, with a

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[9]Letter to all chief ministers, July 2004.

[10]http://persmin.nic.in/EmployeesCorner/Acts_Rules/DraftPublicServiceBill/PublicServiceBill_2007.pdf, accessed July 14, 2008.

view to obtaining these important posts. Our stylized framework then captures how politicians facing short-term electoral pressures could use job assignments as a tool to control bureaucrats with long-term career concerns, as well as how bureaucrats' career investment decisions would respond to such incentives.

3.1 Bureaucrats

Junior officers enter the bureaucracy with an ideological leaning, $j_B \in \{0, 1\}$, and an initial ability a_i that has a distribution $f(a_i)$. The initial number of officers of the two ideologies are N_0 and N_1, such that $N_0 + N_1 = N$, the total number of officers (and posts). During their career, bureaucrats can hold posts of varying importance, which for simplicity, we classify into two categories: important and unimportant: $N^I + N^U = N$. For simplicity, we assume that there is perfect overlap between posts regarded as important by politicians and bureaucrats alike and that such importance is invariant over time. The number of important posts is scarce relative to the initial number of officers of either ideology, i.e. $N^I < N_0, N_1$. Bureaucrats derive positive utility from holding important positions (because they provide opportunities to make influential policy decisions, say); unimportant posts are normalized to yield zero utility. Bureaucrats therefore define career success by the importance of the posts that they are assigned to.

Given politician's preferences (described below), officers early in their career have two alternative routes to future success: either develop a reputation for expertise or build on loyalty to the politician whose ideology they share. Developing expertise requires effort, although such effort is less costly for officers with higher initial ability a_i. Provided there are incremental rewards to developing expertise, it follows that officers with a high enough initial ability will invest effort in becoming high-skilled officers; those with lower initial ability would prefer to build on their intrinsic loyalty to further their career concerns. Thus, starting with an initial ability a_i and ideological leaning j_B, bureaucrats emerge as one of three types $b \in \{H, L_0, L_1\}$: those who are high-skilled, those loyal to party 0 and those loyal to party 1.[11]

Bureaucrats who do not invest in skill generate a low output y_L in important posts; there is no difference in productivity between officers loyal to the two parties. High-skilled bureaucrats vary in their productivity, but they are each at least as productive as the other two types: $y_H = y_L + \theta$ where $\theta \sim U[0, 1]$.[12] In unimportant posts, we normalize output of all officers to zero.

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[11] Our model incorporates the choice of a bureaucrat to invest in both ability *and* loyalty, as discussed in Section 3.2 below.

[12] θ realized by a high-skilled officer does not depend upon his/her initial ability $a(i)$.

3.2 Politicians

As with bureaucrats, politicians are affiliated to one of two parties (ideologies), $j_P \in \{0, 1\}$. The politician's ultimate goal is to have political power, and he cares about bureaucratic output because it influences his chances of remaining in power. We assume that his prospects for success would depend both upon the public good output he can garner for his constituents and on overall public good efficiency.[13] We use $s_b \in [0, 1]$ to represent the share of bureaucrats' output that the politician can control (or channel in favor of his supporters). We use the parameters $\lambda \in [0, 1]$ and $(1 - \lambda)$ to denote the relative importance of control and efficiency respectively in the politician's preferences. Thus, he seeks to maximize $Z = \lambda \sum_{b.n_b} s_b y_b + (1 - \lambda) \sum_{b.n_b} y_b$. He makes assignments $\mathbf{n}_b = \{n_H, n_{L_1}, n_{L_0}\}$ of bureaucrats of different types across important posts accordingly.[14]

The share s_b that the politician can control varies with the bureaucrat's type. With respect to officers loyal to his own party, he has complete control over their output, but he has little control over the output of officers loyal to the other party i.e. $s_{L_0} = 1$ and $s_{L_1} = 0$ for a politician of type 0; $s_{L_0} = 0$ and $s_{L_1} = 1$ for a politician of type 1. As for high-skilled officers, the politician can control a fraction $s_H \in (0, 1)$ of their output. This is because the policy decisions of high-skilled officers are ideologically neutral, coinciding with the politician's interests some of the time, but not always.[15] A typical scenario of this is one where funds have been earmarked for the construction of say, seven schools in a district. A bureaucrat who is loyal to the politician in power would agree to build all the schools in areas preferred by the former, whereas one who is not loyal to this politician may disagree entirely on where the schools should be located in the district. An officer with a reputation for expertise would base his judgement of where the schools are most needed. As a result, he may end up allocating resources to some areas preferred by the politician, but not all of them.

Note that the case where officers choose to invest in skill *and* accommodate both political parties is simply a special case of a type H officer with $s_H = 1$. We choose to assume $s_H \in (0, 1)$ because it is more consistent with the basic patterns observed in our data.[16] Finally, observe that

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[13] Given that nearly half of the cases of political turnover in our data occur in the absence of elections, we have chosen not represent the politician's preferences in terms of utility from winning elections, per se.

[14] An implicit assumption here is that bureaucrats' ability is known to the politician. This is a realistic assumption in our context, given that the number of officers in any particular state is relatively small and that officers serve in the bureaucracy over several decades.

[15] This is a "reduced form" version of the preferences of bureaucrats and politicians modeled in Mueller (2007), where both parties' utilities depend upon the efficiency and ideological match of policies chosen by the bureaucrat.

[16] As will become clear in section 3.4 below, if all officers chose to be of this type, there would be no reason for

when $\lambda = 0$, the politician cares about efficiency alone, and bureaucratic assignment by politicians of either party is based on officers' productivity alone. If so, political change will not necessarily trigger bureaucrat transfers. Since political change is in fact associated with bureaucrat transfers in our data, we consider the case where politicians do care about control over bureaucrats' output, i.e.$\lambda = 1$, for the rest of the analysis. All our results would still be true for $\lambda \in (0, 1)$, albeit in a weaker manner.

3.3   Timing

Our model consists of three time periods. The first period is an "incubation" period. Junior officers enter the bureaucracy, receive training and make decisions on investments that influence their career prospects. The bureaucrats' type is realized after these investments are made, and the politician currently in office makes an initial assignment of officers across posts of varying importance (period 2). In period three, the incumbent faces elections (or other similar pressures against his remaining in office). If he manages to retain power, there is no change in bureaucrat assignments. If, however, he loses power, the new politician who assumes office re-assigns bureaucrats across posts, so as to maximize gains to himself (or his constituency of voters). Bureaucrats retire from the service at the end of period three and the game ends.

3.4   Equilibrium

An equilibrium in our framework consists of a cut off initial ability for bureaucrats and an assignment rule for the politician such that (i) bureaucrats at or above this ability level invest in skill, (ii) both politicians and bureaucrats maximize their respective utilities and (iii) all posts are filled. We sketch out the equilibrium outcome of this game below. The appendix provides a more formal exposition.

To arrive at the pattern of bureaucrat assignments and transfers, we first note that politicians of either party will prefer to assign high-skilled officers to important posts over type L officers as long as $s_H \, y_H > y_L$.   Since $y_H = y_L + \theta$, $\theta \sim U[0, 1]$ bureaucrats with a high enough realized skill level will get priority in important posts.   The rest of the important posts will be filled by officers loyal to the politician in power. Any bureaucrats loyal to the other party will not be assigned to important posts, because the politician will be unable to control their output in favor of his constituents. The inefficiency here is that even though all high-skilled bureaucrats are more

politically induced transfers.

productive than loyal bureaucrats, only a fraction of them will be assigned to important posts.

In period 3, if the incumbent politician retains power after elections, he has little motivation to reassign bureaucrats (given his optimal assignment in period 2). However, if the incumbent is ousted by the other party's politician, any initial assignment of officers optimal for the period 2 incumbent will not suit the new politician. The new politician therefore has an incentive to reassign (transfer) at least some bureaucrats from important to unimportant posts, and vice versa.[17] Since high-skilled officers have been assigned to important posts only if $s_H \, y_H > y_L$, the new politician has little incentive to reassign skilled officers out of important posts. However, with loyal officers, he will prefer to replace officers loyal to the other party with those loyal to his own. It follows that high-skilled officers, should on average, experience less frequent transfers than the loyalists. It also follows that loyal officers are much more likely to experience transfers from important posts to unimportant ones and vice versa, compared to skilled officers.

Finally, we note that, in our framework, all transfers are triggered by political change are for reasons of loyalty (or the lack thereof). This suggests that restrictions on the politician's ability to transfer officers will reduce the value of loyal officers to the former: he would be unable to transfer some bureaucrats who are loyal to the other party when he assumes office. On the margin, this would increase the value of high-skilled officers to politicians, and hence junior bureaucrats' incentive to invest in expertise. As a result of this incentive, limits on politician's ability to transfer officers will positively affect productivity – but only over the long run.

3.5   Testable Hypotheses

To conclude this section, we summarize the testable implications that emerge from our stylized model above:

Hypothesis 1: Given the presence of bureaucrats who are loyal to either party ideology, and politicians who seek to control bureaucrats' output, political change induces bureaucrat transfers.[18]

Hypothesis 2*:* Irrespective of the type of politician in office, high-skilled (type H) officers are less likely to be transferred than type L_0 and type L_1 officers.

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[17]Since output does not differ among posts at the same level of importance, transfers occur only across posts of differing importance. Also, if there is a transfer cost $c \geq 0$ due to dislocation or inexperience of newly assigned officers on their jobs, transfers occur only if there is some net positive gain in output that favors the new politician's objectives.

[18]Note that under the alternative interpretation of $s_b \in [0,1]$ as indicative of the "match quality" between politicians and bureaucrats, even politicians who purely care about efficiency would make bureaucrat reassignments upon entering office. However, the rest of the predictions below are robust to the interpretation taken.

Hypothesis 3: *Over the course of their career, the variation in the importance of the posts held by type H officers is lower than that for type L_0 and type L_1 officers.*

Hypothesis 4: Given the politician's optimal rules for bureaucrat assignments and transfers, bureaucrats with high initial ability will be more likely to make investments in expertise and hence will be more likely to become type H bureaucrats.

4 Data

4.1 Bureaucrat Transfers

Our main data set contains detailed information on the career histories of all officers serving in the Indian Administrative Service (IAS) as of October 2005, obtained from the website of the Ministry of Personnel, Public Grievances and Pensions.[19] We focus our analysis on 4047 officers serving in 19 major states, which comprised 96% of India's population in 2001.[20] 13% of the officers in our data set are female, 75% are recruited through competitive examinations ("direct recruits"). Of the direct recruits, 32% hold appointments in their home state, consistent with the official rule of not more than one-third home state appointments (Table 1, Panel A1 and Panel D).

We have information on the start and end dates of each post held by the officer, the exact designation, the level of seniority, the department (e.g. Finance, Environment, Health etc.) and whether the post was in the central, state or district-level administration. 24% of all posts in our data are district-level posts, and 7% are the particularly powerful District Officer positions.

Based on the start and end dates of each post, we construct a dummy variable for whether the officer is transferred in a given year as follows: if he is recorded as starting a new post in that year, the transfer dummy for that officer and year is assigned to be 1. If he does not start a new post in that year, the transfer dummy is zero. If the officer has not yet joined the service, the dummy is not assigned any value. Multiple transfers within the same calendar year are coded as one as well, so that our measure is an underestimate of the actual transfer probability. We find

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[19]http://persmin.nic.in/ersheet/startqryers.asp, accessed October-December 2005.

[20]These states are Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, Uttaranchal and West Bengal. Chhattisgarh, Jharkhand and Uttaranchal were carved out of Madhya Pradesh, Bihar and Uttar Pradesh respectively, in November 2000. We exclude the following political subdivisions: the state of Delhi, seven smaller northeastern states with population less than 4 million each, eight Union Territories which are governed by the central government, and the state of Jammu & Kashmir, which is governed under special constitutional provisions.

that IAS officers experience very frequent transfers: the average transfer probability for an officer in a given year is 49%.[21]

Since this data set consists of all currently serving officers, it excludes officers who retired in earlier years and is thus less comprehensive for earlier years. We remedy this in two ways: first, we include officer fixed effects in most of our specifications. This would control for factors such as the characteristics or size of specific cohorts. Second, we constructed a second position-level data set on District Officers. In this specification, we have a panel data set for a set of specific positions over time, thereby alleviating concerns of selective attrition of officers from our data set. We constructed the District Officer data set as follows: first, we used the data on career histories from the first data set to identify District Officer positions. We then filled in the gaps in this data by collecting information from the printed copies of the annually published IAS Civil List, which lists the position held by each officer at the beginning of the year.[22] Transfer probabilities in our District Officer data set are very similar to the overall data set, about 52% in a given year.

4.2 Political Events

We put together information on changes in the identity of the Chief Minister in the 19 major states over the period 1980-2004.[23] We also collected information on the dates of state and national elections from the website of the Election Commission of India. This source also gives us information on the seats obtained by different parties in the state legislature in every election, as well as the party identity of the elected representative in each electoral constituency. For each year, we created dummies for whether a new person took office as Chief Minister in that year, and whether state or national elections were held in that year.

Over the years 1980-2004, states had an election about once every five years, but a new Chief Minister once in three years (Table 1, Panel B). This is because a change in the Chief Minister of a state can happen in several ways: first, the incumbent party might lose a state election, as a result of which a new party comes to power and hence a new Chief Minister. Second, it might happen that the incumbent party is re-elected, but chooses a different leader to become the Chief Minister. In our data, about 52% of new CMs come to power as a result of a new party coming to power (Appendix Table 2, Panel A). Third, there can be a change in the Chief Minister even without elections, if his government loses a vote of confidence in the state legislature (see Section

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[21]One-fifth of the transfers in our data are caused by officers taking up more than one new job in a given year.

[22]We were able to obtain the Civil List from 1985 onwards, with the exception of the years 1987, 1989 and 1991.

[23]This information is available from the official websites of the relevant State Governments in most cases.

2.3). Finally, in rare cases, there can be a change in the Chief Minister due to the death or resignation of the incumbent for reasons apart from losing legislative support. Appendix Table 2, Panel B shows that only 54% of new CMs come to power as a result of elections i.e. nearly half of the changes in the chief executive of the state are *not* related to elections.

4.3 Bureaucrat Ability and Loyalty

We obtained measures of bureaucrat ability at the beginning of their careers and twenty years into their careers, which will enable us to document the pattern of career progression our model indicates. The measure of initial ability is the officer's rank within his/her cohort after initial recruitment and training. Using this, we created dummies for whether the officer was among the top 10 and top 20 members of his/her cohort.

The ex-post measure of ability is a measure of whether the officer has been found to be eligible for senior central government positions in New Delhi (which are considered prestigious). The bureaucracy conducts a detailed review of officers' careers after about 20 years, and selected officers are "empaneled" i.e. deemed suitable for senior central government positions. Such "empanelment" of an officer is widely regarded as a sign that the officer is of superior ability.[24] All the officers in a given cohort are reviewed at the same time, and approximately 65% of them are empaneled (Table 1, Panel C). We have data on the empanelment status of the cohorts recruited between 1979 and 1987.

For the officers of Uttar Pradesh and Uttaranchal cadres, we also obtained their caste identity. Politics in the state of Uttar Pradesh have been dominated by caste–based appeals by most parties in the 1990s. We use this to compute a measure of whether the officer's caste is the same as that of the Chief Minister's party base. In terms of our framework, being of the same caste as that of the party base should make it easier for an officer to invest in "loyalty" to that politician. We can then check whether such "loyal" officers are more likely to be assigned to important positions when their preferred politician is in power.[25]

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[24]In their article on the Indian Administrative Service, bureaucrats Krishnan and Somanathan (2005, p. 297) state, "The quality of officers in the Government of India is commonly felt to be better than the average in the state governments." There are of course some concerns with the empanelment process, arising from the lack of transparency in the evaluation process and occasional political interference. Empanelment is therefore not a perfect measure of bureaucrat competence, but an informative one nevertheless.

[25]We obtained this information for 80% of the directly recruited officers in the states of Uttar Pradesh and Uttarakhand. We have currently assigned party-wise caste bases as follows: the Samajwadi Party (SP) is associated with appeals to Yadavs, Backward Castes and Muslims, the Bahujan Samaj Party (BSP) with the Scheduled Castes,

4.4 Importance of Posts

Based on detailed interviews with several IAS officers, we constructed a measure of whether certain departments were considered more important, more prestigious or more desirable than others, by the bureaucrats themselves.[26] We should note that in our context, it is precisely such subjective measures of the importance of posts that are required. After all, it is only these perceptions of officers that allow politicians to use assignment across posts as "carrots and sticks:" the Constitution precludes formal demotion of IAS officers by state politicians, but a move from the Department of Finance to, say, the Department of Youth Affairs would be regarded as a de facto demotion by most officers.

We currently identify the following departments as important (out of a list of 50 different departments): excise and sales tax, finance, food and civil supplies, health, home, industries, irrigation, public works and urban development. We should note that departments were identified as desirable for several different reasons: for instance, the Home Ministry is considered important because it is a prominent position with responsibility for law and order, the Sales Tax department because it gives officers access to a lot of state funds, and Finance because this department controls the budgets of all other departments.[27]

We also classify all District Officer positions and central government positions as important. Overall, 46% of our observations involve officers holding important positions (Table 1, Panel D).

5 Politician Change and Bureaucrat Transfers

5.1 Are Bureaucrats Transferred when the Politician Changes?

We find that the average rate of bureaucrat transfers in a state increases significantly when there is a politician change in that state. We quantify the relationship between political and bureaucratic turnover captured in these pictures using the following linear regression specification:

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and the Bharatiya Janata Party (BJP) with the Forward Castes (Brahmins, Rajputs, Banias and Kayasths).

[26] A department is coded as important if 50% or more of the officers who did the ranking regarded it as important.

[27] These diverse considerations make it difficult to use more "objective" measures of importance, such as the share of that department in the state's budget. For instance, the Finance Department would not command a large share of the budget, while Education, which accounts for up to one-fifth of state expenditure, is not considered very prestigious by the bureaucrats themselves. This could be because most of the budget is earmarked for teacher salaries, leaving very little room for bureaucratic discretion.

$$Transfer_{jt} = a_j + b_t + cPolChange_{jt} + X'_{jt}d + e_{jt} \qquad (1)$$

where $Transfer_{jt}$ is the average of the transfer dummy for all officers in state j and year t, a_j is a fixed effect for state j, b_t is a dummy for year t, $PolChange_{jt}$ is a dummy which equals one if a new Chief Minister took office in state j and year t, X_{jt} are other time-varying state characteristics and e_{jt} is an error term. Since transfers within the same state might be correlated over time, we cluster our standard errors at the state level (Bertrand, Duflo and Mullainathan (2004)).

We find that, despite the strong constitutional provisions for insulating the bureaucracy from politics, bureaucrat transfers significantly increase when a new Chief Minister (CM) takes office in the state. The presence of a new Chief Minister increases the average bureaucrat transfer probability in the state by 4.6 percentage points (Table 2, Column 1). This result is robust to controlling for other time-varying state characteristics such as the holding of state-level and national elections (Column 2) and controlling for real state domestic product, crime rates and the incidence of riots (Column 3).[28] Columns (4) and (5) use monthly transfer data to show that most of these transfers take place in the first four months after a new Chief Minister takes over. The same trend is illustrated in Figure 3.[29] Our results thus confirm Hypothesis 1.

5.2 Do Party Characteristics Matter for Bureaucrat Transfers?

Our theoretical model does not distinguish between politicians and political parties. In our empirical work, these are not the same: 48% of all Chief Minister changes take place without a change in the party in power (Appendix Table 1, Panel A), and 46% of Chief Minister changes happen in non-election years (Appendix Table 1, Panel B). A Chief Minister who comes to power along with a new party in power is slightly more likely to transfer bureaucrats than a Chief Minister who comes to power without a change in the party in power, an increase of 5% points in transfers compared to 4%, but this difference is not statistically significant (Table 2, Column 6). A similar result holds for Chief Ministers who come to power as a result of elections compared to those

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[28] However, there could also be reverse causality in the sense that frequent transfers of bureaucrats might result in a deterioration of law and order or poor implementation of economic policies; hence, we present this specification only as a robustness check. Kingston (2004) examines the relationship between riots and transfer frequency in the 1980s, and finds ambiguous results: transfers are negatively correlated with riots in the cross-section, but positively related in the panel specification.

[29] In related work, Iyer and Mani (2007) verify in detail that these transfers are not driven by the timing of elections.

who come to power in other circumstances (Table 2, Column 7). While the timing of elections is anticipated, non-election based Chief Minister changes are unlikely to be. Hence this last finding clarifies that the rise in transfers associated with political turnover is not driven by officer transfers being bunched up around an expected Chief Minister change, for pure administrative convenience. We therefore use politician change rather than party change in most of our subsequent regressions.

Appendix Table 2 presents the results of several robustness checks on the specification used in Table 2, Column 2. We find that the statistically significant coefficient on the national election dummy in Table 2 is driven by two outliers: the states of Punjab and Assam did not have national elections in the same years as the rest of the country in 1985 and 1991 due to internal disturbances. Once we set their election dates to the national election dates, there is no significant effect of national elections on bureaucrat transfer frequency (Appendix Table 2, Column 1). The effect of a new CM is robust to controlling for the presence of a new Prime Minister and to dropping the years of President's Rule, when the state administration was conducted by the central government (Columns 2 and 3). The results are also not driven by any one state: we re-ran the specification of Table 2, Column 2 dropping one state at a time: the coefficients ranged from 0.038 to 0.051, and were always significant (results not shown).

The impact of the Chief Minister on bureaucrats is independent of his party's seat share in the state legislature, of whether his party has a majority on its own, and whether his party is part of the governing coalition in the center (Appendix Table 2, Columns 4, 5 and 6). The only party characteristic which seems to matter is whether the CM belongs to a regional rather than a national party. Regional party Chief Ministers are significantly more likely to transfer bureaucrats upon coming into office, though the overall impact of a national party CM is still statistically different from zero (Column 7).[30] We note further that the impact of the Chief Minister on transfers is much higher in the 1990s than in the 1980s (columns 8 and 9). This is consistent with the rise to prominence of several regional political parties after 1989, many of whom represent previously under-privileged social groups (Chandra (2004)).

5.3 Are High-skilled Bureaucrats Less Likely to be Transferred?

Our results so far are consistent with our framework of politicians using transfers as an important tool in dealing with bureaucrats. We now turn to testing Hypothesis 2: are high-skilled bureaucrats

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[30]In India, a national party is defined as one which has a significant electoral presence in at least four states.

less likely to be transferred by a new Chief Minister? We run the following linear regression:

$$Transfer_{ijt} = a_i + b_t + cNewCM_{jt} + fNewCM_{jt} * OfficerChar_{ijt} + X'_{ijt}d + u_{ijt} \qquad (2)$$

where $Transfer_{ijt}$ is a dummy variable for whether officer i of state j was transferred in year t, a_i is a fixed effect for the officer, b_t is a fixed effect for the year, $NewCM_{jt}$ is a dummy indicating whether a new Chief Minister came to power in state j in year t, $OfficerChar_{ijt}$ represent different officer characteristics (we are particularly interested in ability, but we also include as controls gender, experience, and whether the officer serves in his/her home state) and X_{ijt} is a vector of controls for other time-varying officer and state characteristics (years of experience, state and general elections). We construct two measures of bureaucrat ability, based on their within-cohort ranks after recruitment and training.[31] The first is a dummy for whether the officer was among the top 10 people in his/her cohort, and the second is whether s/he was in the top 20. Our theory predicts that the coefficient on $NewCM_{jt} * Ability$ will be negative. As in all the other regressions, standard errors are clustered at the level of the state.

We first replicate the earlier state-level regressions with individual data and officer-level fixed effects (Table 3, Column 1). We find that the presence of a new Chief Minister increases bureaucrat transfer probability by 5 percentage points, very similar to the estimates we obtained using state-level means in Table 2. This is reassuring because it means that our results are not driven by some omitted state-level differences in officer characteristics. In particular, it means that our results are not driven by the attrition bias in our data set caused by the fact that we do not have data on officers who have retired or left the IAS.

Appendix Table 3 provides some further robustness checks on our original hypothesis of bureaucrat transfers being a tool for controlling bureaucrats. We see that most transfers initiated by a change in the CM are "lateral" i.e. occur between posts at the same level of seniority, and not promotions. In other words, the reassignments we observe are not a reward for past performance or routine promotions that merely coincide with a new CM coming into office (Appendix Table 3, Columns 2 & 3). The incoming Chief Minister does not affect transfers to central government posts in New Delhi; all the reassignments are to state secretariat or district positions (Columns 4, 5 and 6). This is consistent with the fact that the CM's authority typically does not extend to the central government.[32]

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[31] Since these ranks are related to the officer's performance in the entrance examination, we have this measure only for the "direct recuits."

[32] All results in the paper are robust to dropping central government posts.

Our officer-level regressions strongly support our hypothesis that high-skilled officers are significantly less likely to be reassigned when a new politician comes into office (Table 3, Columns 2 and 3). In particular, an officer who was ranked among the top 20 in his/her cohort is 2 percentage points less likely to be transferred when a new politician takes office. These regressions also illustrate differences across other types of officer characteristics. More experienced officers are significantly more likely to be reassigned by an incoming politician, which is consistent with our model in the sense that these are the officers who have developed a specific reputation i.e. whose type has been revealed. We also tested whether high-skilled officers are less likely to be transferred after their type has been revealed i.e. after they have spent a number of years in the bureaucracy. We did this by including the triple interaction $NewCM_{jt} * Ability * YearsofExperience$ in the regression (2) above. As expected, the sign on this triple interaction was negative, but the coefficient was not significant.

We find similar results if we include all the officers (not just the direct recruits), and use the length of tenure in the previous post as a proxy for greater ability. Officers who have spent a longer time in their previous post are less likely to be transferred when a new Chief Minister takes office (Appendix Table 3, Column 7). This is consistent with our model in the sense that high-ability bureaucrats are more likely to be retained in their posts by politicians of both parties.

Another interesting result in Table 3 is that officers serving in their home state are significantly more likely to be reassigned by incoming politicians. Ex-ante, it is not clear what to expect here. Officers serving in their home state have some inherent advantages in doing their job well. For instance, they are familiar with the local language and culture, which may decrease their marginal cost of becoming an "high-skilled" type. On the other hand, they may have pre-existing ties with specific state politicians, or may find it easier to develop such ties and thus have a lower cost of becoming a "loyal" type. The empirical results suggest that the latter effect dominates over the former.

5.4   Do "Able" Bureaucrats Have More Even Career Paths?

A further implication of our theoretical framework is that the career paths of the high-skilled types will be more even than those of the "loyal" types (Hypothesis 3). We test this hypothesis by classifying our transfer dummy into two types: transfer between posts of similar importance (important-important or unimportant-unimportant) and transfer between posts of dissimilar importance (important-unimportant or unimportant-important). We define importance as described

in Section 4.4. We run the following specification:

$$TransfertoDifferentImportance_{ijt} = a_i + b_t + cNewCM_{jt} + fNewCM_{jt} * OfficerChar_{ijt}$$
$$+X'_{ijt}d + u_{ijt} \tag{3}$$

where $TransfertoDifferentImportance_{ijt}$ is a dummy variable which equals one if officer i of state j was transferred to a post of a different importance in year t (i.e. transferred from an important post to an unimportant one, or from an unimportant post to an important one), a_i is a fixed effect for the officer, b_t is a fixed effect for the year, $NewCM_{jt}$ is a dummy indicating whether a new Chief Minister came to power in state j in year t, $OfficerChar_{ijt}$ represent different officer characteristics (including the ability measure) and X_{ijt} is a vector of controls for other time-varying officer and state characteristics. Our theory predicts that the coefficient on $NewCM_{jt} * Ability$ will be negative.

We find clear support for the hypothesis that the "high-skilled" types will have more even career paths. Table 4, Columns 1-4 show the results of estimating 3 by OLS and logit respectively. The coefficient on $NewCM_{jt} * Ability$ is negative and statistically significant at the 5% level, both in the OLS and in the logit specification, for officers in the top 20 ranks in their cohort. The results are in the same direction for officers in the top 10 ranks in their cohort, though not statistically significant.

We also ran multinomial logit regressions, where the base category was "no transfer" and the other categories were whether an officer is transferred to a post of similar importance, and whether the officer is transferred to a post of different importance.[33] We find that "high-skilled" officers are somewhat less likely to be transferred between posts of a similar importance (compared to "loyal" officers), but they are significantly less likely to be transferred between posts of dissimilar importance (Columns 5-6). In fact, the difference in the coefficients on $NewCM_{jt} * Ability$ is significantly different between columns (5) and (6). As in the earlier regression, the results are in the same direction when we use the top 10 measure of ability, but not statistically significant. This provides confirmation for our hypothesis that the possibility of getting important positions is the main device used by politicians to motivate bureaucrats in this setting.[34]

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[33]In our stylized model, officers are never transferred from one important post to another, but this does occur in practice.

[34]We run the logit and multinomial logit regressions without officer fixed effects, but with controls for the officer fixed characteristics such as ability, gender and whether they serve in their home state.

5.5   Bureaucrats' Career Concerns

We now turn to document the relationship between the initial ability ranking of the bureaucrat and his/her subsequent career path. We find that bureaucrats of higher initial ability are significantly more likely to be "empaneled" about twenty years into their careers (Table 5, Columns 1 and 2), providing strong support for Hypothesis 4. This strongly suggests that they have made career investments to develop a reputation as competent officers. As mentioned in Section 2.2, the empanelment process involves a detailed review of the officer's career by senior bureaucrats in the Central Government. Being so empaneled and considered eligible for senior central government positions is widely regarded as a signal of ability. Interestingly, we see that serving in your home state does not have any significant effect on the probability of being empaneled, suggesting that the incentives of home-state officers for becoming more "high-skilled" are almost the same as the incentives for becoming more "loyal." It is theoretically possible that officers in states with less politician turnover might choose to invest more in loyalty, but we see very few differences in empanelment probabilties across states.

We provide some empirical support for the "loyalty" track as follows: as described in section 4.3, we computed a measure of whether the officer belongs to the same caste as that of the Chief Minister's party base. We check whether this helps their career concerns by running the following regression:

$$OfficerinImportantPost_{ijt} = a_i + b_t + g_1 OfficerSameCaste_{ijt} + X'_{ijt}d + u_{ijt} \qquad (4)$$

where $OfficerinImportantPost_{ijt}$ is a dummy variable for whether officer i of state j holds an important post in year t, a_i is a fixed effect for the officer, b_t is a fixed effect for the year, $OfficerSameCaste_{ijt}$ is a dummy which equals one if the officer belongs to the caste base of the current Chief Minister's party and X_{ijt} is a vector of controls for other time-varying officer and state characteristics. Our theory predicts that the coefficient on $OfficerSameCaste$ should be positive.

We find strong support for this hypothesis: being of the same caste as the Chief Minister's party base significantly increases an officer's probability of being in an important post by 7 percentage points (Table 5, Columns 3 and 4). We should note that since this regression is run with officer fixed effects, it compares the same officer at different points of time: when his "preferred" Chief Minister is in power, and when he is not. This is the first empirical analysis of the role of

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caste in the public sector that we are aware of.[35]

Having provided some evidence that officers have two potentially viable paths to obtaining better career positions, we investigate whether the expertise track yields overall better career success. The answer is no (Table 5, Columns 5 and 6): the average importance of the posts held by an officer over the course of his or her career does not vary significantly with their initial ranking. This is very much in keeping with our framework which emphasizes that officers have alternative routes to career success; investment in expertise is not the only one.

6 District Level Transfers and Outcomes

In this section, we extend our original framework to incorporate the role of subordinate/lower-level politicians and generate some testable hypothesis for bureaucrat transfers at the district level.

6.1 Local Politicians and Bureaucrats: Substitutes or Complements?

We introduce a subordinate (district-level) politician as a "middleman" M between the politician and the bureaucrat at the district level. As with the other agents, these subordinate politicians also belong to either party, so $j_M \in \{0, 1\}$. We also assume that subordinates from the same party are motivated to act in the interests of the politician and his constituents, but not those from the opposition. i.e. $s_M = 1$ if $j_M = j_P$, and $s_M = 0$ otherwise.

Since all district bureaucrat posts are regarded as very prestigious, we will regard them as important posts in our framework. In our earlier analysis, we saw that a politician of type 0 will assign only type L_0 and type H bureaucrats to these posts. When he enters office by replacing a type 1 incumbent, he would thus want to reassign type L_1 officers in district posts to unimportant ones.

However, this can change with the presence of motivated district politicians. How the presence of such a middleman will affect the politician's control over the bureaucrat's output depends upon whether the subordinate politician and the bureaucrat are "complements" or "substitutes" in determining the politician's control over output at the district level. Of course, if local politicians have no effect on politician's control over bureaucrats, their presence should not impact transfers in any way. Since our goal is to derive clear testable predictions for transfer patterns and outcomes at the district level, we consider very simplified representations of the alternative possibilities.

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[35]See Munshi and Rozenzweig (2006) for an empirical analysis of the influence of caste networks on education investments and labor market outcomes in the private sector.

1. *Complements:* If subordinate politicians and bureaucrats are complements, we assume that the politician's control at the district level is given by $s^{dist} = \min\{s_M, s_b\}$. In this case, having high political control at the district requires that *both* the district politician and the bureaucrat are loyal to the politician. If so, a newly elected type 0 politician will replace type L_1 district officers with type L_0 or H officers, but only in districts where the local politician is from his own party i.e. we expect to see *more bureaucrat transfers in districts where the local politician belongs to the same party as the Chief Minister.*

2. *Substitutes*: If district "middleman" politicians and bureaucrats are substitutes, a politician's effective control at the district level can be represented by $s^{dist} = \max\{s_M, s_b\}$. Thus, having either a motivated district politician *or* a motivated bureaucrat is enough to ensure that the politician's interests (and that of his supporters) in the district are well-served. In this case, we expect to see more bureaucrat transfers in districts where the local politicians are *not* from the same party as the Chief Minister.

We generate the following hypotheses to take to the data:

Hypothesis 5: Political change will result in transfers of bureaucrats in District Officer positions. Following political change, district officer transfer patterns will depend on the proportion of local politicians who belong to the new Chief Minister's party.

Hypothesis 6: If there is a change in the politician (Chief Minister) without a change in the *party* in power, then there is no effect of local politicians from the CM's party on transfer patterns.

What does this imply for district level outcomes? In our model, all districts where bureaucrats are transferred will have a bureaucrat who is "loyal" to the current politician, and will therefore see an output level y_L. Districts with no politically induced transfers are either those where the local politician belongs to the politician's party (and so can have an output of y_L or y_H), or those where there is a high-skilled bureaucrat with $s_H y_H > y_L$ (and so will have have an output of y_H). In other words, the output in districts without politically induced transfers should be at least as high as in those where such transfers take place, or perhaps higher. We test this specific implication of our framework in section 6.3 below.

6.2 District Level Bureaucrat Transfers

To check whether these predictions are borne out in the data, we use our data set of District Officer transfers, because we can match this up to the presence or absence of district-level politicians from the Chief Minister's party. The District Officer may be likened to the "CEO" of the district, with over-arching responsibility over most administrative matters in the district (see Section 2.1 for details of these positions). Specifically, we run the following regression:

$$Transfer_{djt} = a_d + b_t + cNewCM_{jt} + fNewCM_{jt} * DistrictChar_{djt} + X'_{jt}d + u_{djt} \qquad (5)$$

where $Transfer_{djt}$ is a dummy variable for whether the District Officer of district d of state j was transferred in year t, a_d is a fixed effect for the district, b_t is a fixed effect for the year, $NewCM_{jt}$ is a dummy indicating whether a new Chief Minister came to power in state j in year t, $DistrictChar_{djt}$ represent different district characteristics (in particular, the fraction of local politicians who belong to the same party as the CM) and X_{ijt} is a vector of controls for other time-varying state characteristics (state and national elections). For this analysis, we aggregate electoral outcomes to the administrative district level. State electoral districts are usually subsets of administrative districts, with one administrative district containing on average 10 electoral districts.[36]

We first document that District Officers are indeed significantly likely to be reassigned when a new Chief Minister takes office (Table 6, Column 1). In fact, the impact of a new CM is much higher for District Officers than for all positions taken together (8.4 percentage points compared to 4.6 in Table 2).

As our framework predicts, the probability of reassignment depends strongly on the presence or absence of local politicians from the CM's party (Table 6, Column 2). If none of the politicians in a district belong to the CM's party, then the probability that the bureaucrat is transferred rises by nearly 14% points when a new CM comes into office. In contrast, if all the local politicians are from the CM's party, this probability rises by only 3.7 percentage points (0.137-0.100), which is not significantly different from zero. This strongly favors the interpretation that local level politicians and local bureaucrats are viewed as "substitutes" by the Chief Minister. These results are consistent with Hypothesis 5.

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[36] All variables are further aggregated to the 1988 administrative district boundaries, to account for splits in districts over time. This makes our transfer dummy to lie between 0 and 1 in a few cases; we verify that our results are robust to recoding all transfer probabilities greater than 0.5 as 1 and those less than 0.5 as 0.

We also find strong support for Hypothesis 6: If there is a change in the Chief Minister without a change in the party in power, then there are no significant reassignments of district bureaucrats (Table 6, Column 3). This finding confirms the core of our framework. It confirms that it is political control that is a strong motivation for district officer transfers by a new Chief Minister; it is not simply considerations of the efficiency of the "match" between the officers and the new Chief Minister, as may be the case with a new "CEO" bringing in his own team.

Finally, Column 4 of Table 6 verifies that the effects we document are not simply a function of political turnover or the extent of anti-incumbent voting (see Linden (2003) for details on the increasing incumbency disadvantage in Indian politics).

6.3 Are Development Outcomes Affected by Bureaucrat Transfers?

We examine two specific measures of district-level policy implementation outcomes: immunization coverage in the year 2001, and the completion status of road projects in 2007. The major caveat with using these outcomes is that these are only a subset of the district administrator's purview. To get a more comprehensive picture of the effect on district outcomes, we use an overall measure of well-being: poverty reduction over a twelve year period (1987-1999), based on district-level poverty estimates from Topalova (2005).

In immunization coverage and road completion, we find no significant differences in outcomes in areas with a higher frequency of politician-induced transfers (Table 7, columns 1-3).[37] In contrast, with the comprehensive measure of long term poverty reduction (1987-1999), we do observe somewhat greater success in districts with lower politically induced transfers(column 4). Poverty rates declined by 0.9 percentage points less in districts which had a 10 percentage point higher probability of politically induced transfer. This is similar to the effect for poverty reduction over a shorter period 1993-1999, though the latter is not statistically significant (Column 5). These results suggest that the cost of political transfers in terms of longer-term outcomes can be quite high.[38]

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[37] Here we define "politician-induced" transfer as one which happens to coincide with a change in the identity of the Chief Minister.

[38] It is possible, of course, that the observed associations are driven by variables which affect both the extent of political transfers and the rate of poverty reduction. Our results should therefore be treated as suggestive, rather than conclusive.

7 Conclusion

We have developed a framework to study how politicians would exert control over bureaucrats with different preferences, when the latter face very low-powered incentives. Using a unique data set on the career histories of bureaucrats in the Indian Administrative Service (IAS), we find considerable support for the main features of our framework. There is significant political influence on the bureaucracy through frequent transfers of bureaucrats across posts, despite the constitutional insulation provided to them against political pressures. Not all officers face the same odds of being transferred: high-skilled officers are much less likely to be transferred by an incoming politician and they have more even career paths, in terms of the importance of posts held. However, investing in skill is not the only career path to success; belonging to the same caste as the politician's party base also helps officers to secure more important posts.

District transfer patterns emphasize that politicians initiate them for reasons of political control, rather than the efficiency of the match with their team of bureaucrats alone. Officers are unlikely to be transferred if local politicians from the Chief Minister's political party represent the district. These new insights into the internal structure and workings of government make a valuable contribution to our understanding of governance and public policy implementation. With respect to the impact of transfers on outcomes, there is some suggestive evidence that districts with lower politically induced transfers do better over the long run.

Our framework suggests that instituting limits to the politician's power to transfer bureaucrats, such as those in the proposed Public Services Bill, will favorably affect junior officers' incentives to invest in expertise. This implies positive effects on bureaucrats' productivity, but these effects are likely to occur over the long run. There may be other general equilibrium effects as well. Limiting transfers might have a large impact on the overall morale of bureaucrats, or can lower the transaction costs of investing in area-specific expertise. On the other hand, if they anticipate losing power, politicians may try to use bureaucrat transfers strategically to limit their opposing politician's options. These issues offer interesting avenues for further research.

8 Appendix 1: Framework for Analyzing Bureaucrat Transfers

Politicians seek to maximize the size of total bureaucrat output they can control. Given the shares $s_b \in [0,1]$ of bureaucrats' output that they control, their preferences can be expressed as:

$$\underset{\mathbf{n}_b}{Max} \sum_{b.n_b} s_b y_b \tag{6}$$

where $\mathbf{n}_b = \{n_H, n_{L_0}, n_{L_1}\}$ is the assignment of bureaucrats to important posts in a given time period.

Bureaucrats can allocate effort into developing a reputation for expertise, or choose loyalty to particular politicians/parties as the route to career success. Officers can choose between high effort e_h or low effort e_l in developing expertise; greater effort increases their chances of becoming a type H officer, but it is more costly too. The effective cost of such effort, $c(e) \geq 0$ is lower for those with higher initial ability, i.e. the effective effort cost $c(e).g(a_i)$ is decreasing in initial ability a_i, $g'(a_i) < 0$.

Let us denote the lifetime expected utility of officers of types H and L by U_H and U_L respectively. A bureaucrat will choose high effort e_h if and only if the expected utility net of the cost of effort is greater for high effort than for low effort, i.e.:

$$e_h U_H + (1 - e_h)U_L - c(e_h).g(a_i) > e_l U_H + (1 - e_l)U_L - c(e_l).g(a_i) \tag{7}$$

To simplify matters, we set $e_h = 1$ and $e_l = 0$, $c(e_l) = 0$. In the above equation then, the bureaucrat chooses high effort in developing expertise if and only if:

$$(U_H - U_L) - c(1).g(a_i) \geq 0, \tag{8}$$

and zero effort otherwise.

Equilibrium

An equilibrium consists of a cut off ability threshold a^*among bureaucrats and an assignment rule $\mathbf{n}_b$ for the politician such that:

(1) All officers with initial ability above a certain threshold a^* optimally choose the high effort level e_h and those with ability below a^* optimally choose effort level $e_l = 0$.

(2) Politicians and bureaucrats both maximize their individual utility and

(3) All officers are assigned among the N posts available, i.e. $\sum_b n_b = N, b = \{H, L_0, L_1\}$.

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We solve for the equilibrium outcome of the first two periods of this game backwards.[39] Let us begin with the politicians' optimal assignment rule that will maximize equation(6) for a politician of type j, given the number of officers of each type $b = \{H, L_0, L_1\}$. Since $s_H \in (0,1), s_{L_j} = 1$ and $s_{L)j(} = 0$ and $y_H = y_L + \theta$, $\theta \sim U[0,1]$, the optimal assignment rule for important posts is:

1. First assign type H officers for whom $s_H y_H(\theta) > y_L$, which implies that the number of type H officers assigned to important posts in period two, $n_H > 0$ irrespective of the type of politician in office.

2. Then assign other important posts to type L_j officers, which implies that $n_{L_{b=j}} \geq 0$

3. Do not assign type $L_{b \neq j}$ officers to important posts (since the politician can control none of their output), implying that $n_{L_{b \neq j}} = 0$.

   This assignment rule gives rise to a corresponding probability $q(I \,|b, j)$ of an important post I for an officer of type b when a politician of type j is in office. So for instance, if a politician of type 0 is in office, these probabilities for different types of officers are as follows:

$$q(I\,|H,0) \;=\; \min\{1, \frac{N^I}{(1-\theta^*)[(1-F(a^*))N^0 + (1-F(a^*))N^1]}\} = q(I\,|H,1) \qquad (9a)$$

$$q(I\,|L_0,0) \;=\; \max\{0, \frac{N^I - n_H}{N^0.F(a^*)}\} \qquad (9b)$$

$$q(I\,|L_1,0) \;=\; 0 \qquad (9c)$$

where θ^* is the cutoff value of θ above which politicians prefer able officers over loyal ones for important posts, a^* is the equilibrium level of initial ability above which officers invest in becoming type H in period one and $F(.)$ is the c.d.f. for officer ability a_i. Once important posts have been assigned to *all* type H and L_0 officers as per the optimal assignment rule, there will be no important posts left for type L_1 officers. This is because $N^I < N_0$ by assumption and the combined total number of the first two types of officers must exceed N_0.

Let p_j^{win} be the (exogenous) probability of party j winning power in a given time period. Given the above expressions for officers' probability of getting important posts $q(.)$, we can write U_H and U_L as:

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[39] Period three of the game is a repeat of period two, for a given initial assignment of bureaucrats to posts.

$U_H = \delta(1 + \delta)u_{IMP}[p_0^{win}. \; q(I \,|0, H) + p_1^{win}. \; q(I|1, H)]$ and

$U_L = \delta(1 + \delta)u_{IMP}[p_0^{win}. \; q(I \,|0, L|) + p_1^{win}.q(I \,|1, L)]$

where is δ the per-period discount factor and u_{IMP} represents per-period utility to a bureaucrat from an important post. The components of U_H within square brackets indicate the likelihood of a bureaucrat of type H being assigned to an important post, conditional on a politician of type $j = \{0, 1\}$ being in office. The expression for U_L is similar.

Plugging the probabilities $q(.)$ back into equation (8) and using the expressions for U_H and U_L, we can solve for a^* in period one by imposing equality, as follows:

$$u_{IMP}[p_0^{win}q(I \,|0, H) + p_1^{win}q(I \,|1, H) - p_0^{win}q(I \,|0, L_0)] = c(1).g(a_i) \qquad (10)$$

The right hand side of equation (10) is decreasing in a_i whereas the left-hand side is constant in a_i. As a result, there exists a unique intersection between the LHS and RHS, giving us a unique equilibrium ability level a^*above which all officers invest high effort in expertise in period one. This gives rise to three types of officers, where the number of each type $n_H = (N^0 + N^1)(1 - F(a^*))$, $n_{L_1} = F(a^*)N^1$ and $n_{L_0} = F(a^*)N^0$.

We can now predict the pattern of transfers in period three as follows. Without loss of generality, we assume that a newly elected politician of type 0 assumes office (with probability $p_0^{win} = (1 - p_1^{win})$) in this period, whereas the incumbent in period two was of type 1.[40] At the beginning of period three, we have initial assignments $\mathbf{n}_b^2 = \{n_H^2, n_{L_1}^2, n_{L_0}^2\}$, which were the outcome of the maximization of equation (2) by politician of type 1 in period two. We can infer that these assignments are such that $n_H^2 > 0, n_{L_1}^2 \geq 0$ and $n_{L_0}^2 = 0$.

Transfers are a function of the initial allocation $\mathbf{n}_b^2$ relative to politician 0's optimal assignments $\mathbf{n}_b^3$ as outlined above. The optimal assignment for politician of type 0 are $n_H^2 > 0, n_{L_0}^2 \geq 0$ and $n_{L_1}^2 = 0$. This implies that, when a type 0 politician takes over from a type 1 politician in period three,

1. All type L_1 officers in important posts are transferred to unimportant posts.

2. They are replaced first, with type L_0 officers and then type H officers, as needed.

3. Type H officers who initially had important posts under politician from party 1 are retained by politician of party 0.

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[40] If the incumbent in period two retains power, no bureaucrats are transferred, irrespective of their type.

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Table 1: Summary statistics

	# Obs	Mean	s.d.	Minimum	Maximum
Panel A1: Bureaucrat characteristics					
Year of joining service	4047	1987	8.84	1968	2004
Year of birth	4045	1957	8.78	1945	1981
Proportion female	4047	0.13	0.33	0	1
Proportion of direct recruits	4047	0.75	0.43	0	1
Panel A2: Bureaucrat transfers (1980-2004 annual data)					
Transfer dummy	69097	0.49	0.50	0	1
Years of experience	69097	11.41	7.94	0	36
Proportion in District Officer posts	69097	0.07	0.25	0	1
Proportion in district administration	69097	0.24	0.43	0	1
Transfer to a post of similar importance	69097	0.28	0.45	0	1
Transfer toa post of different importance	69097	0.21	0.40	0	1
District Officer transfer dummy (1985-2004)	6692	0.52	0.48	0	1
Panel B: State-level political variables (1980-2004)					
New Chief Minister (CM) dummy	415	0.32	0.47	0	1
New party in power dummy	415	0.17	0.37	0	1
State election year dummy	415	0.23	0.42	0	1
General election year dummy	415	0.32	0.47	0	1
Seat share of CM's party	407	0.56	0.17	0.12	0.85
CM's party has a majority of seats	407	0.70	0.46	0	1
CM belongs to a national party	407	0.78	0.41	0	1
First-time CM (of all new CMs)	133	0.62	0.49	0	1
Panel C: Bureaucrat ability (direct recruits only)					
Proportion of home state officers	3024	0.32	0.47	0	1
Proportion in top 10 ranks of cohort	2884	0.12	0.32	0	1
Proportion in top 20 ranks of cohort	2884	0.24	0.42	0	1
Proportion empaneled for central government posts (1979-1987 cohorts)	1033	0.65	0.48	0	1
Proportion same caste as Chief Minister's party base (Uttar Pradesh officers, 1990s)	4082	0.42	0.49	0	1
Panel D: Importance of posts					
Important post based on officer interviews	69097	0.46	0.50	0	1

Table 2: Does a politician change result in bureaucrat turnover?

Dependent variable: state-level bureaucrat transfers

	New CM (1)	Control for elections (2)	Controls for SDP and crime (1991-2003) (3)	Monthly regression (4)	Monthly regression (5)	How did CM come to power	
						With party change (6)	With elections (7)
New Chief Minister dummy	0.046***	0.044***	0.050***	0.017**	0.019**		
	(0.012)	(0.013)	(0.017)	(0.007)	(0.007)		
Up to 4 months after CM change					0.016***		
					(0.002)		
Up to 4 months before CM change					-0.000		
					(0.002)		
State election dummy		0.008	0.011	-0.005	-0.006	0.003	
		(0.015)	(0.022)	(0.005)	(0.005)	(0.017)	
New CM, new party in power						0.051**	
						(0.020)	
New CM, no new party in power						0.040***	
						(0.014)	
New CM after election							0.053***
							(0.017)
New CM, no election							0.041**
							(0.014)
Election, no new CM							0.003
							(0.015)
General election dummy		-0.028***	0.014			-0.031**	-0.029***
		(0.010)	(0.021)			(0.011)	(0.010)
State fixed effects	YES	YES	YES	YES	YES	YES	YES
Year fixed effects	YES	YES	YES			YES	YES
Month fixed effects				YES	YES		
Observations	415	415	207	4950	4810	415	415
R-squared	0.37	0.37	0.47	0.31	0.32	0.37	0.37

Robust standard errors in parentheses, corrected for state-level clustering
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 3: Officer ability and bureaucrat transfers

Dependent variable =1 if officer was tranferred during the year
Sample = Direct recruits only

	(1)	(2)	(3)
New CM dummy	0.050***	0.006	0.008
	(0.016)	(0.012)	(0.013)
New CM * top 10 rank in cohort		-0.024*	
		(0.013)	
New CM * top 20 rank in cohort			-0.023*
			(0.011)
New CM * female dummy		-0.022	-0.022
		(0.013)	(0.013)
New CM * Years of experience		0.033***	0.033***
		(0.010)	(0.010)
New CM * home state		0.029**	0.030**
		(0.011)	(0.012)
Officer and year fixed effects	YES	YES	YES
Control for years of experience (quadratic)	YES	YES	YES
Control for state & general elections	YES	YES	YES
Observations	55330	51669	51669
R-squared	0.06	0.06	0.06

Robust standard errors in parentheses, corrected for state-level clustering
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 4: Do officers of high ability have less variation in job quality after a politician change?

Sample = direct recruits only

	Transfer to a post of different importance				Multinomial logit coefficients	
					Transfer to post of similar importance	Transfer to post of different importance
	OLS (1)	OLS (2)	Logit (3)	Logit (4)	(5)	(6)
New CM dummy	0.001	0.004	0.038	0.052	0.036	0.074
	(0.012)	(0.012)	(0.063)	(0.063)	(0.063)	(0.070)
New CM * top 10 rank in cohort	-0.017		-0.083			
	(0.011)		(0.057)			
New CM * top 20 rank in cohort		-0.025**		-0.146***	-0.069	-0.177***
		(0.009)		(0.053)	(0.050)	(0.060)
New CM * female dummy	-0.024**	-0.024*	-0.153**	-0.154**	-0.062	-0.180***
	(0.011)	(0.011)	(0.060)	(0.062)	(0.052)	(0.067)
New CM * Years of experience	0.016**	0.016**	0.084**	0.084**	0.130***	0.132***
	(0.006)	(0.006)	(0.036)	(0.036)	(0.042)	(0.042)
New CM * home state	0.009	0.012	0.045	0.066	0.128***	0.118**
	(0.010)	(0.010)	(0.053)	(0.055)	(0.049)	(0.057)
Observations	51669	51669	51669	51669	51669	51669
R-squared	0.07	0.07				
Control for						
Officer fixed effects	YES	YES				
Years of experience (quadratic)	YES	YES	YES	YES	YES	
Gender, home state, rank			YES	YES	YES	
State & general elections	YES	YES	YES	YES	YES	
Year fixed effects	YES	YES	YES	YES	YES	

Robust standard errors in parentheses, corrected for state-level clustering.
* significant at 10%; ** significant at 5%; *** significant at 1%
The categorical variables for the multinomial (non-ordered) regressions in columns (5)-(6) are "no transfer"
(base category), "transfer to a post of similar importance" and "transfer to a post of different importance."
The coefficients in column (5) therefore represent the impact of the independent variable on the probability that
the officer is transferred to a post of similar importance, compared to the base category of no transfer.

Table 5: Initial ability and career progression of bureaucrats

Dependent variable	Empanelment dummy		Officer holds an important post		Mean Importance of officer's posts over career	
Sample	Direct recruits (1979-1987 cohorts)		Uttar Pradesh cadre (1990-2004)		Direct recruits	
	(1)	(2)	(3)	(4)	(5)	(6)
Rank in top 10 of the cohort	0.070*				0.005	
	(0.037)				(0.013)	
Rank in top 20 of cohort		0.137***				0.008
		(0.020)				(0.011)
Female	0.037	0.038			-0.047***	-0.047***
	(0.061)	(0.063)			(0.011)	(0.011)
Home state dummy	0.006	-0.014			-0.027***	-0.028***
	(0.035)	(0.034)			(0.008)	(0.008)
Officer belongs to the caste base of CM's party			0.068***	0.075***		
			(0.019)	(0.022)		
New CM				0.011		
				(0.062)		
New CM * Ranked top 20 in cohort				-0.004		
				(0.040)		
New CM * Female				0.023		
				(0.049)		
New CM * Years of experience				-0.048**		
				(0.024)		
New CM * Home state officer				0.038		
				(0.037)		
Control for						
Year of recruitment fixed effects	YES	YES			YES	YES
Year fixed effects			YES	YES		
Officer fixed effects			YES	YES		
No. of observations	1030	1030	4082	3255	2878	2878
No. of officers	1030	1030	349	281	2878	2878
R-squared	0.07	0.08	0.26	0.22	0.38	0.38

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
Columns (3) and (4) also include a quadratic control for years of experience, and interactions of
New CM with the female dummy and with years of experience. Standard errors in these regressions are adjusted
for state-level clustering. The sample for these regressions is officers in the Uttar Pradesh cadre.

Table 6: Does the Presence of Local Politicians Matter for Bureaucrat Transfers?

Dependent variable =1 if the district gets a new District Officer in that year

		Interaction of New CM with		
		Presence of local politicians	Local politicians + party change	Political turnover
	(1)	(2)	(3)	(4)
New CM dummy	0.084**	0.137***		0.079*
	(0.039)	(0.034)		(0.045)
New CM * %local politicians from CM party		-0.100**		
		(0.044)		
New CM, new party			0.232***	
			(0.042)	
New CM, no new party			0.048	
			(0.043)	
New CM, new party * % local politicians from CM party			-0.157**	
			(0.067)	
New CM, no new party * % local politicians from CM party			0.008	
			(0.097)	
% local politicians from CM party		0.033	0.035	
		(0.036)	(0.035)	
New CM * political turnover				0.040
				(0.108)
Political turnover				-0.048
				(0.103)
Year fixed effects	YES	YES	YES	YES
District fixed effects	YES	YES	YES	YES
Control for state and general elections	YES	YES	YES	YES
Observations	6679	6679	6679	6679
# districts	356	356	356	356
R-squared	0.07	0.07	0.07	0.07

Robust standard errors in parentheses, corrected for state-level clustering.

* significant at 10%; ** significant at 5%; *** significant at 1%

"Political turnover" is measured as the proportion of incumbents in the district who lost in the most recent election.

Table 7: Bureaucrat Transfers and District Outcomes

	Proportion of children completely immunized	Completion of road projects		Change in poverty 1987-99	Change in poverty 1993-99
		Sanctioned in 2000	Sanctioned in 2003		
	(1)	(2)	(3)	(4)	(5)
Mean political transfers in last 5 years	-0.013	0.131	0.181		0.085
	(0.067)	(0.188)	(0.204)		(0.049)
Mean other transfers in last 5 years	-0.037	0.055	-0.011		0.045
	(0.072)	(0.136)	(0.163)		(0.027)
Mean political transfers in last 10 years				0.087*	
				(0.049)	
Mean other transfers in last 10 years				0.032	
				(0.040)	
Initial poverty level				-0.787***	-0.764***
				(0.055)	(0.042)
State FE	yes	yes	yes	yes	yes
Mean of dep var	0.58	0.71	0.34	-0.13	-0.07
Observations	363	330	328	350	350
R-squared	0.70	0.54	0.28	0.69	0.65

Robust standard errors in parentheses, clustered at state-level
* significant at 10%; ** significant at 5%; *** significant at 1%
"Completion of road projects 2007" is a dummy which equals one if the road projects sanctioned in a given year was completed by June 2007.
"Change in poverty" is the change in the head count ratio.

Appendix Table 1: Correlation between different political events

Panel A: New Chief Ministers and Party changes

	No new party in power	New party in power	Total
No new CM	274	0	274
New CM	63	70	133
Total	337	69	407

Panel B: New Chief Ministers and Election years

	No election	Election	Total
No new CM	253	21	274
New CM	61	72	133
Total	314	93	407

Data is for 19 major states from 1980-2004.
Years of Presidents Rule are excluded.

Appendix Table 2: Robustness Checks for State-level Regressions

Dependent variable: state-level bureaucrat transfers

	Corrected General Election dates	New Prime Minister	Dropping years of President's Rule	Does legislative strength matter?		Link to central government	Regional party effect	1980-89	1990-2004
				CM party seat share	Is CM in a coalition				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
New Chief Minister dummy	0.043***	0.044***	0.044***	0.051*	0.040**	0.053**	0.032**	0.012	0.056***
	(0.013)	(0.013)	(0.013)	(0.029)	(0.016)	(0.021)	(0.013)	(0.012)	(0.019)
General election dummy (corrected)	0.020								
	(0.036)								
New Prime Minister dummy		-0.005							
		(0.030)							
Seat share of CM's party				0.006					
				(0.032)					
New CM * Seat share of CM's party				-0.013					
				(0.053)					
CM's party has majority in state legislature					-0.013				
					(0.012)				
New CM * CM's party has majority in state legislature					0.005				
					(0.019)				
CM's party is in power at center						0.006			
						(0.007)			
New CM * CM's party is in power at center						-0.018			
						(0.021)			
CM's party is a regional party							-0.017		
							(0.017)		
New CM * CM's party is a regional party							0.072***		
							(0.018)		
State and year fixed effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Control for state and general elections	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	415	415	407	407	407	407	407	160	255
R-squared	0.37	0.37	0.38	0.38	0.38	0.38	0.40	0.27	0.45

Robust standard errors in parentheses, adjusted for clustering at state level.

* significant at 10%; ** significant at 5%; *** significant at 1%

Appendix Table 3: Robustness checks for officer-level regressions

Dependent variable	Officer transferred	Transfer with promotion	Lateral transfer	Transferred to central government	Transferred to state Secretariat	Transferred to district level position	Officer transferred
	All officers	All officers	All officers	All officers	All officers	All officers	All officers
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
New CM dummy	0.048***	0.006	0.043***	-0.000	0.033**	0.015**	0.028*
	(0.015)	(0.004)	(0.014)	(0.003)	(0.012)	(0.007)	(0.015)
New CM * length of tenure in post							-0.012*
							(0.007)
New CM * female dummy							-0.022*
							(0.011)
New CM * Years of experience							0.027**
							(0.012)
New CM * home state							0.026*
							(0.013)
Mean of dependent variable	0.49	0.15	0.34	0.06	0.30	0.49	0.56
Officer and year fixed effects	YES	YES	YES	YES	YES	YES	YES
Control for years of experience (quadratic)	YES	YES	YES	YES	YES	YES	YES
Control for state & general elections	YES	YES	YES	YES	YES	YES	YES
Observations	69097	68007	68007	69097	69097	69097	58199
R-squared	0.11	0.05	0.08	0.12	0.12	0.13	0.08

Robust standard errors in parentheses, corrected for state-level clustering
* significant at 10%; ** significant at 5%; *** significant at 1%

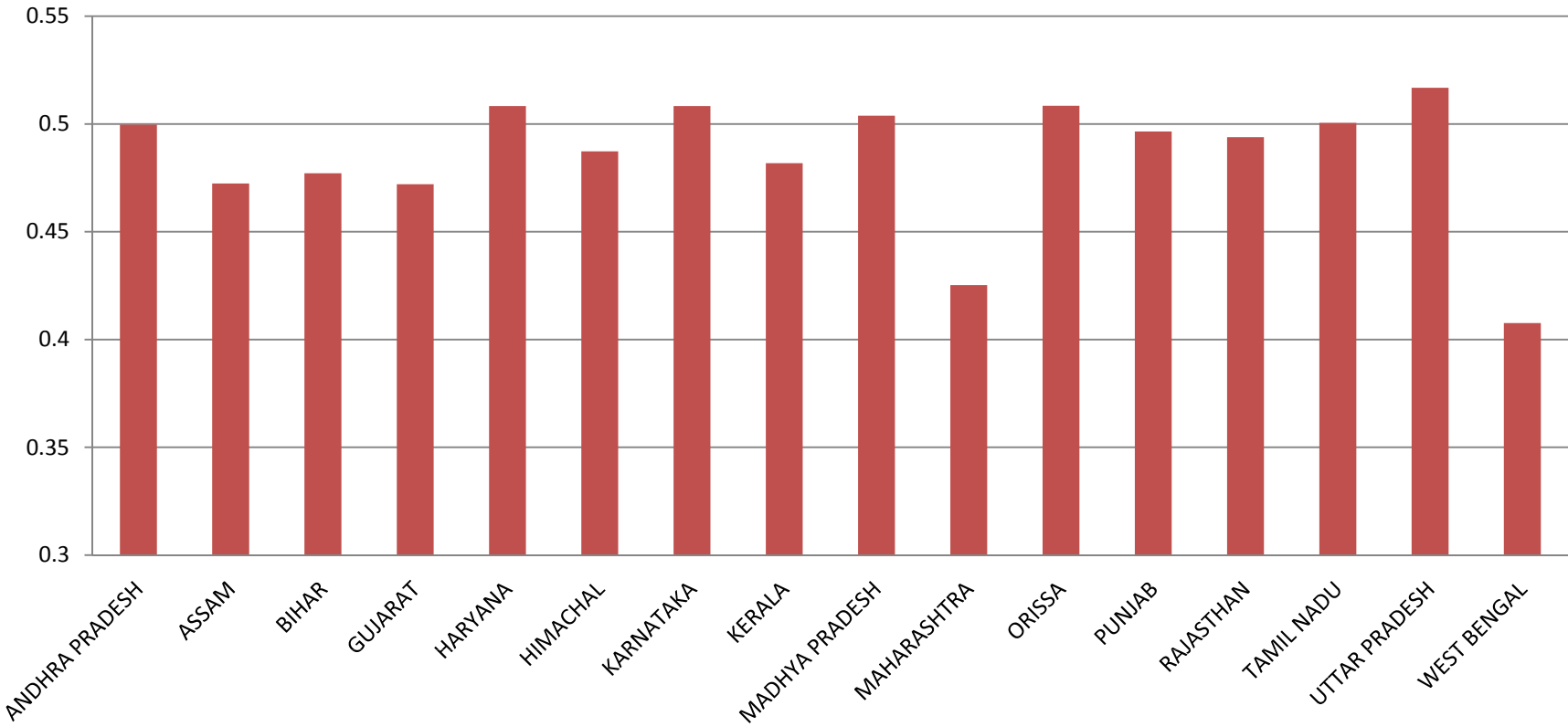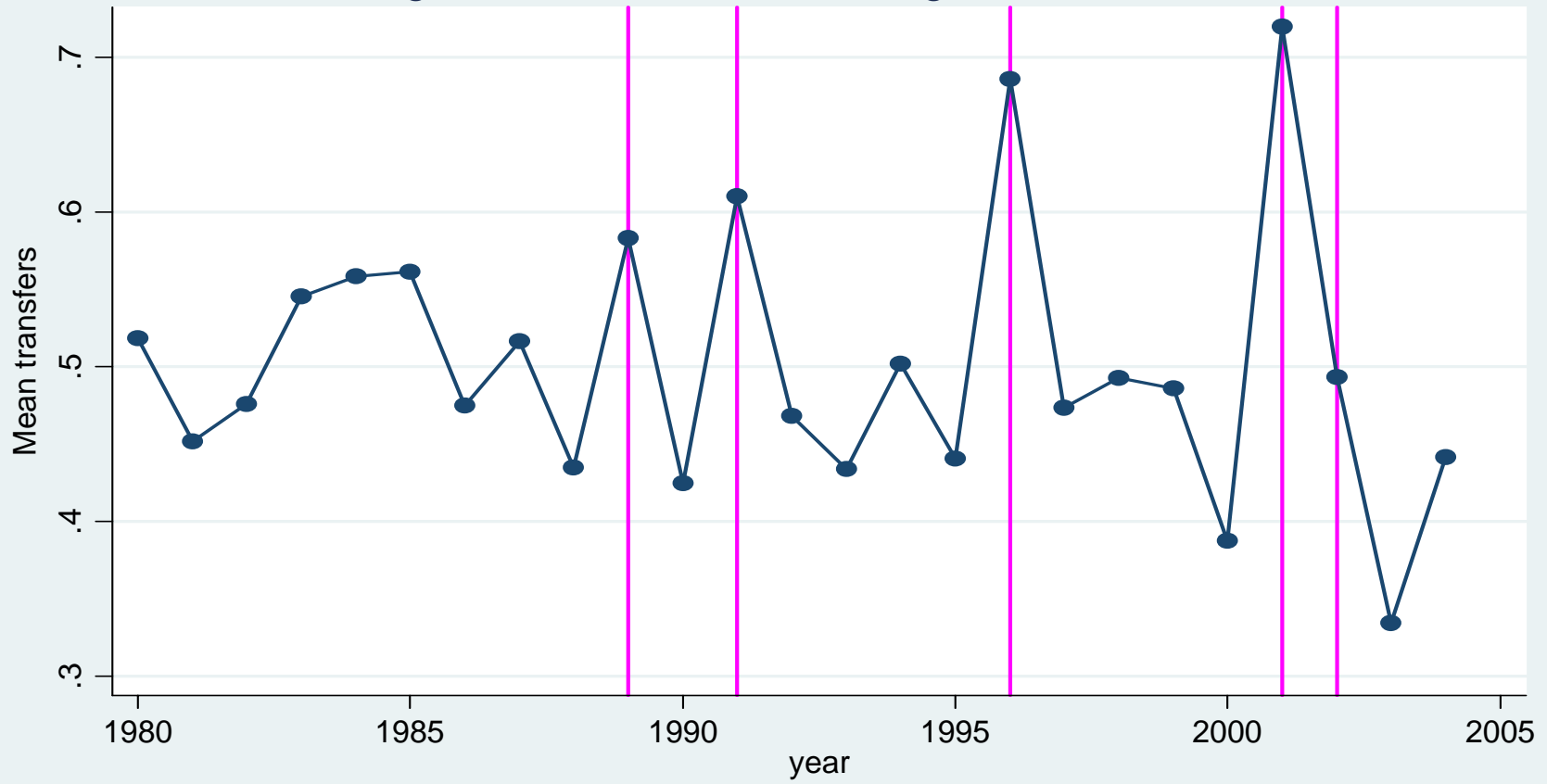Figure 1: Mean transfer rates in major states 1980-2004

Figure 2: Chief Minister changes in Tamil Nadu

Figure 3: Monthly Bureaucrat Transfers