Organization of the State: Home Assignment and Bureaucrat Performance*

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Abstract

How to allocate personnel is a central question in the organization of the state. We link survey data on the performance of 1,472 elite civil servants in India to their personnel records between 1975-2005 to study how home allocations affect their performance and careers. Using exogenous variation in home assignment generated by an allocation rule, we find that bureaucrats assigned to their home states are perceived to be less effective and more likely to be suspended. These negative effects are driven by states with higher levels of corruption and cohorts with greater numbers of home state officers.

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1 Introduction

All organizations face the question of how to allocate talent. Multinationals decide how to assign managers across branches and subsidiaries. International organizations decide how to allocate staff across country offices. Governments decide over the allocation of civil servants across departments and regions.

Common to all these decisions is the theoretical tension between delegation and control (Aghion and Tirole, 1997; Dessein, 2002). Allocating agents to more familiar environments, for example, may enable them to leverage their informational advantage to better adapt to local conditions. The same informational advantage, however, might also be exploited for private gain. Despite this theoretical ambiguity, there is scarce evidence that sheds light on such allocation effects. A large body of literature has focused on how to select and motivate recruited workers (Lazear, 2000; Dal Bó et al., 2013; Khan et al., 2019; Benson et al., 2019; Ashraf et al., 2020). How allocation decisions affect performance through the *matching* of people to workplaces, however, is understudied. This is especially the case for bureaucrats who work in some of the world's largest organizations – governments – and particularly for senior-level bureaucrats whose actions may have a substantial bearing on state effectiveness and organizational performance.

This paper studies how one type of allocation – the assignment of workers to their home areas – affects performance. The question of whether officers should be assigned to their home area has been a core issue in the organization of the state throughout much of history.[1] Our context is the Indian Administrative Service

[1]Roman rulers, for example, appointed local councils but frequently assigned an outside governor to oversee functions like tax collection (Woolf, 2013). The royal officers who forged France into an early nation state were barred from holding office in their place of birth using the argument that "a paid official sent out by the government, who had no power network in the area to which he had been assigned, and, in the way of a true bureaucrat, owed his income and social status wholly to the central administration that he represented" was "fanatically loyal to the king" (Cantor, 2015). In Imperial China a similar "rule of avoidance" prevented district magistrates to serve in their home districts (Ebrey and Smith, 2016).

(IAS), the elite civil service of India. Its personnel - close to 4,000 centrally recruited officers - form the administrative backbone of India, heading up all major government departments at both the central and the state level. IAS officers, hailing from all parts of India, are centrally recruited and subsequently assigned to state cadres, in which they serve for life. Given their importance, the manner in which they are allocated across the country could impact how well policies are implemented and hence the economic outcomes for millions of people.

Several challenges make the study of allocation effects in organizations difficult. The primary challenge is that workers are not randomly allocated across workplaces. Observed allocation patterns typically result from purposeful decisions that seek to maximize the decision maker's objectives, making it difficult to establish causality. The second challenge is the measurement of performance, which is especially difficult for senior-level workers in public organizations. In contrast to firms where we can observe profits or stock market valuation, states pursue a multitude of objectives. This is also reflected in the senior civil servants we study, who rotate across many different tasks and departments over their career, pursuing a wide range of objectives. In the presence of multi-tasking, obtaining a single measure of performance is extremely difficult.

To obtain exogenous variation, we rely on detailed institutional knowledge of the home state assignment rule. This allows us to implement an instrumental variables strategy where we isolate a source of variation that predicts the allocation to home state and is uncorrelated with observable individual background characteristics of the officers. In balancing the aims of equalizing the quality of administrators across the states of India whilst affording officers the chance of serving in their home state, the IAS uses a rule-based mechanism to deploy newly recruited officers to states. While higher ranked officers are prioritized in the home state assignment, we exploit the fact that officers are grouped according to their caste $\times$ home state bracket when being ranked in the allocation process. This implies that officers who are

the only candidate in their bracket in a given year of intake are allocated to their home state with near certainty. Variation in the bracket size, however, depends on whether officers from the same caste and state passed the competitive entry exam in the same year. We argue and show that officers are, conditional on the caste $\times$ home state selection bracket, as good as randomly assigned to their home state.

To measure performance, we leverage a large-scale survey where we elicited expert assessments of the civil servants we study. Such "360-degree feedback"[2] is used for performance appraisal across both private and public organizations, and commonly used in managerial science (Bracken et al., 2001). "360" evaluations are particularly suitable for generalists for whom individual measures are difficult to come by. We elicited perceptions of civil servants from their colleagues, politicians, as well as senior-most representatives of business associations, civil society, local TV and media through confidential interviews. For each officer, we obtain evaluations for effectiveness, probity, the ability to withstand illegitimate political pressure, pro-poor orientation, and their overall rating. Overall, we collected 84,379 assessments from 831 experts. We link these measures to personnel records of 1,888 officers entering between 1975-2005. These records provide rich individual characteristics that allow us to assess the validity of the assessments and also enable us to track their careers up to 2019.

We establish three key findings. First, home state allocated officers receive systematically lower performance scores than comparable officers who are allocated to non-home states. Instrumental variable estimates suggest that officers allocated to their home states are deemed to be less effective, more corrupt, less able to withstand illegitimate political pressure, less pro-poor and lower performing overall. The magnitude of the estimated effect is large, amounting to a difference of 0.27 SD – half of the difference in the mean effectiveness score between a suspended vs.

[2]The term "360 degree" feedback refers to multi-source feedback used by organizations to elicit information about employees' work-related performance.

non-suspended officer. These negative assessments are not driven by hearsay or particular stakeholders but also hold with the inclusion of source of information and respondent fixed effects.

Second, the lower performance scores go with tangible differences in career outcomes. We find that home allocated officers are more likely to be suspended and less likely to serve on deputation at the central government – a prestigious posting requiring comprehensive merit-based vetting.

Third, the magnitude of the negative home state effect depends crucially on local conditions. The negative home state effect is driven by the states that rank higher on measures of corruption. Home state officers in high corruption states receive significantly worse performance scores, are more likely to be suspended and less likely to serve the central government. Finally, leveraging annual variation in the number of officers qualifying for the home state, home state officers perform particularly poorly when allocated to cohorts with a larger number of same state officers. Once again, this is driven by states with high levels of corruption.

While perceptions of bureaucrats – as representatives of the state – are important in their own right, an interpretational issue with *any* subjective evaluation is that such measures may not reflect actual performance. Our survey respondents are senior-level members of both public (e.g. secretary-level civil servants, elected members of the state assembly) and private organizations (e.g. CEOs, chairpersons, chief editors) who frequently interact with civil servants and thus have first-hand knowledge of these officers. The answers were collected in confidential in-person interviews averaging 45 minutes per respondent. This gives us assurance that our measurement is not driven by echo chambers but instead taps into information on bureaucrat performance that had not been mined before. In a context of civil service leaders who multi-task, engage in team production and rotate across geographical and administrative units, our "360-degree" scores help contribute to opening up

the black box of bureaucratic performance. Indeed, it is the lack of comparable performance measures for elite bureaucrats that motivated the collaboration with the national training academy for IAS officers (LBSNAA) to collect the survey measures in the first place (Bertrand et al., 2019).

Our key contribution is to provide evidence for causal home allocation effects for senior-level bureaucrats using individual-level outcomes. The sparse literature on allocation effects has mostly focused on coarser outcomes at the province or district-level. Persson and Zhuravskaya (2016), for example, show different province-level spending patterns for local Chinese party secretaries, arguing for home bias due to greater connections to the elite. Bhavnani and Lee (2018) relate the district-level change in shares of villages with high schools between 1991 and 2001 to the change in the mean share of local bureaucrats in India.[3] One exception that exists is Ichino and Maggi (2000). The authors document how patterns of absenteeism and misconduct in a large Italian bank are characterized by regional differentials, exhibiting a positive correlation between a (non-random) mover's shirking level and the average shirking level of the co-workers in the destination branch. Our combination of bureaucrat-level outcomes and an exogenous variation in officer allocation across states provides a unique opportunity to make progress.

Our paper also relates to the growing body of literature on social incentives in organizations (Bandiera et al., 2009, 2010; Ashraf and Bandiera, 2018). In our context, home allocations increase social proximity by reducing the geographic distance between the workplace and home, as well as increasing the propensity to share the same language, culture or values. Focusing on the one-off and life-long deployment of officers to states allows us to isolate worker-workplace match effects, providing novel evidence in a setting that hitherto primarily focused on the incentivizing role of frequent transfers (Iyer and Mani, 2012; Jia et al., 2015; Khan et al., 2015; Xu,

[3]While also studying the IAS, their analysis is restricted to junior officers who serve in the districts (< 12 years of service). Our analysis covers officers across their entire careers.

2018; Khan et al., 2019). By focusing on how to allocate already selected talent, we complement the literature on the selection effects of discretionary hiring (Hoffman et al., 2018; Colonnelli et al., 2020).

More broadly, our findings contribute to a long-standing debate on how to organize the state. The rise of nation states necessitated the formation of centralized bureaucracies to implement policies, coordinate economic activities and drive the development process (Amsden, 1992; Wade, 2004; Evans, 1995). Across history, there has been a shift from local rulers executing key functions through kin, personal trustees and court-servants to permanent, professional bureaucracies running nation states. A central objective of such bureaucracies was to devise systems and rules like "home avoidance" that reduced the patronage and corruption that had plagued earlier systems of government. However, running against this centralizing tide has been a recent shift back towards localization of public service delivery (Bardhan and Mookherjee, 2006; Mansuri et al., 2013; Mookherjee, 2015; Casey, 2018). This literature argues that agents recruited from the communities they serve are higher performing due to the informational advantages they possess.

The state-level heterogeneity we uncover speaks to the tension between these two perspectives. It is only in environments correlated with weak governance structure where home state officers underperform. In states with low corruption, home state officers overperform compared to non-home state officers. This makes it clear that whether home assignment kindles or thwarts the desire to serve the public – and hence strengthens or weakens the organization of the state – depends greatly on the environment into which an officer is thrust.

The rest of the paper is organized as follows. In Section 2, we present the data sources and the institutional background, focusing on the allocation rule we exploit as a source of exogenous variation. Section 3 describes our empirical strategy. Section 4 reports the main findings on the relationship between bureaucrat per-

formance and home allocation, as well as heterogeneity in this relationship across Indian states, career stages and cohorts. Section 5 concludes.

2 Background and data

The Indian Administrative Service (IAS) is the elite administrative civil service of the Government of India. In 2014, the IAS had an overall strength of around 3,600 centrally recruited officers. These officers are civil service leaders, occupying key positions critical for policy implementation. The most senior civil service positions - the Cabinet Secretary of India, the Chief Secretary of States, heads of all state and federal government departments - are occupied by IAS officers.

The recruitment of officers is based on the performance in the Civil Service Exam, which is annually organized by the Union Public Service Commission (UPSC). Entry into the IAS is extremely competitive, with several hundred thousand applicants competing for a small number of spots. In 2015, for example, 465,882 UPSC exam takers faced only 120 IAS slots. Those who do not qualify for the IAS may obtain positions in less competitive civil service streams such as the Indian Police Service (IPS), the Indian Forest Service (IFS), the Indian Revenue Service (IRS) or the state civil services. The highest performing exam takers are typically offered slots in the IAS. There are quotas for the reserved castes, namely the Other Backward Castes (OBC), Scheduled Castes (SC) and Scheduled Tribes (ST).

Once selected, IAS officers are allocated to a state cadre. In our study period, the only preference officers could declare was whether to be allocated to their home state. Once allocated, rules governing the service apply equally to all officers, irrespective of the assigned state. The assignment to a state is fixed for life, and officers are attached to their state cadre even when serving at the central government or abroad.[4] After selection and allocation to a state cadre, officers undergo training

[4]The only exception for transfers across states is in the case of marriage to another officer. These

at the Lal Bahadur Shastri National Academy of Administration (LBSNAA) and in the states. The two-year training consists of one year academic training at the LBSNAA and one year practical training ("district training"). After training, recruits are initially placed in the district administration (e.g. as district collectors), and are subsequently promoted to higher level positions. Promotions are primarily seniority-based. Finally, retirement occurs at 60 years of age.

2.1 Data and descriptive statistics

2.1.1 Survey data on performance

A key challenge in organizations is the measurement of performance. This challenge is particularly pronounced for senior-level public servants, who work in teams, and frequently rotate across departments and tasks. As a concrete example, consider the career of the following 1992 Bihar cadre officer. During 28 years of service, the officer has held eleven different job titles, ranging from (assistant) collector in five different districts of Bihar to the managing director of the Bihar State Milk Cooperative Federation, a secretary in the Finance Department in Patna, the private secretary in the Ministry of Planning in Delhi and the economic minister at the Embassy of India in DC.[5] Working across such a wide range of positions is a defining feature of IAS officers. Among all officers, the median officer rotates across 13 different departments, with a median length of a posting of 14 months. While finding a measure for a single posting is challenging, finding a comparable traditional measure of performance *throughout* an officer's entire career is almost impossible.

In Bertrand et al. (2019), we introduce a new survey instrument to measure the performance of civil servants based on subjective performance ratings. Such "360" evaluations are frequently used for performance evaluations in both private and public organizations. Officers are scored on a scale of 1 (low) to 5 (high), covering

cases, however, have to be approved on a case-by-case basis and are rare.

[5]This officer, of course, is Arunish Chawla, our collaborator in Bertrand et al. (2019).

five dimensions: effectiveness, probity, the ability to withstand illegitimate political pressure, pro-poor orientedness and overall performance. We conducted the survey with the support of the national training academy of IAS officers (LBSNAA). The survey was implemented by an independent data collection company.

To obtain informative assessments, we interviewed a wide range of senior stakeholders. We consulted a random sample of IAS officers, state civil servants, members of the legislative assembly and senior-level representatives of media, business and NGOs. These experts comprised the highest level representatives of major business associations,[6] as well as key journalists of the largest newspapers and TV stations covering politics and the highest representatives of major NGOs, trade unions and think tanks.[7] For civil servants, most respondents are principal secretaries and secretaries; for firms, most respondents hold the title of director or managing director, followed by chief executive officer; for media, most respondents hold the position of editor. Interviews were confidential and conducted in person. The average duration of an interview lasted 45 minutes. This is a substantial time commitment for respondents with this level of seniority.

We collected performance scores for a cross-section of centrally recruited IAS officers in 2012-13. Due to budgetary reasons, the sample was restricted to officers with at least 8 years of tenure and working in the 14 larger states of India.[8] These 14 states comprise 84% of India's population (Census 2011).[9] Overall, we interviewed 831, collecting 84,379 assessments for a total of 1,472 officers.

Table 1 reports the mean and standard deviation of the performance scores. The

[6]Confederation of Indian Industry (CII), the Federation of Indian Chambers of Commerce and Industry (FICCI), the Associated Chambers of Commerce and Industry of India (ACCI).

[7]All India Trade Union, Secretariat Employees Union.

[8]These are: Andhra Pradesh, Bihar, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. We use state definitions in 2012 (e.g. Bihar excludes Jharkhand, while Andhra Pradesh includes Telangana).

[9]Given the proportionate allocation of IAS officers across states, we are thus covering a comparable fraction of the total officers. In our sample, 80% of IAS officers are allocated to the 14 states.

sample sizes range from 15,153 for the probity measure to 17,753 for the effectiveness measure. The number of complete assessments across all dimensions is 14,037. We elicited scores for about 71% of all officers in our sample.[10] All dimensions are correlated, with the highest correlation being between pro-poor orientation and the ability to withstand illegitimate political pressure.

2.1.2 Administrative data

We link the survey data on performance with several administrative data sources from the training academy. The descriptive rolls contain a rich set of individual background characteristics for 5,635 officers who entered between 1975-2005. Characteristics range from the year of birth, their home state, caste, family background, educational degrees and work experience.

The inter-se-seniority lists cover 4,107 officers from 1972-2009. This data provides information about the allocation of officers to states as well as their scores on the entry exam, training course and overall rank. Finally, the executive record sheets cover the postings of 11,462 officers who entered between 1949-2019. These records contain detailed information about postings and payscales, allowing us to track the progression of officers over time. We restrict the sample to centrally recruited officers.[11] The final dataset for which we were able to link the officers across all datasets covers 1,888 officers who entered between 1975-2005.

Table 2 compares the average individual characteristics of officers who are allocated to their home state vs. those who are not. The sample comprises all officers who entered between 1975-2005. The table shows the average for home officers (column 1) and the difference relative to a non-home officer (column 2). In accordance with

[10] Given the seniority of the respondents we interview, we consider this a high response rate. Importantly, response rates do not differ significantly by home vs. non-home status Table B6.

[11] IAS officers can be recruited centrally via competitive exams (direct entry) or via promotions from the state civil services (state promotees). We focus on the main entry margin that allows us to isolate the rule-based allocation of officers to states.

the merit-based home state allocation (see next section for a detailed description), home state-allocated officers tend to rank, on average, higher. Officers who receive their home state rank on average 11 positions higher than those who do not. The non-random allocation for home state-officers also translates into significant differences on other margins: home state-allocated officers are, on average, slightly older at entry, less likely from the Other Backward Castes and more likely from Scheduled Castes. More generally, a joint hypothesis test rejects the null that home state-allocated officers are, on average, comparable to non-home state officers.

2.2 Allocation rule

We describe the rule governing the allocation of officers to state cadres in detail as this will generate the critical source of variation for our analysis.[12] We focus on the allocation rule that has been in place throughout the cohorts 1984-2005.[13] The allocation follows a strict rule-based procedure. After entering the service following the nation-wide entry exams administered by the Union Public Service Commission (UPSC), the centrally recruited officers are allocated to 24 cadres. These cadres typically map directly into Indian states.[14] The allocation process can be divided into three steps. In the first step, applicants are asked to declare their preference whether to remain in their home state (referred to as "insider" preference). In the second step, the overall number of vacancies and the corresponding quotas for castes and insiders are determined. In the final step, vacancies and officers are

[12]The exact documentation can be found in the IAS guidelines. Refer to the original official notifications: 13013/2/2010-AIS-I, 29062/1/2011-AIS-I and 13011/22/2005-AIS-I published in the Department of Personnel and Training, Ministry of Personnel, Public Grievances and Pensions, Government of India. We describe the dominant allocation rule in our study period 1976-2005. The rule was reformed in 2008. See Thakur (2020) for a matching theoretical analysis of the reform.

[13]Between 1978-1984, officers were allowed to also declare preferred "zones" (i.e. groups of states) for the outsider allocation (the "Limited Zonal Preference System"). After 2008 (and thus beyond our study period), officers were allowed to declare their preferences beyond a home state allocation by ranking the states in their preferred order (the "Merit-cum-preference system").

[14]Smaller states, however, are grouped into three joint cadres, which are Assam-Meghalaya, Manipur-Tripura and AGMUT (Arunachal Pradesh, Goa, Mizoram and Union Territories (which includes Delhi). We did not survey states with pooled cadres due to logistical constraints.

matched in the actual allocation process. The three steps are:

1. Officers declare their preference to remain in their home state.[15] Since the allocation to a cadre is life-long and the home preference the only margin of cadre choice, nearly all officers exercise the option to remain in their home state. Not declaring home preferences is riskier as it opens the possibility to be allocated to *any* other state (See Step 3). For the 2006 intake, for example, 87 out of the 89 recruited officers declared a home state preference. The declared preference however does not guarantee the actual allocation as the assignment depends on the availability of vacancies.

2. The total number of vacancies is determined by the state government in conjunction with the Department of Personnel and Training (DoPT). Typically, the overall number of vacancies in a given year depends on the shortfall from the total number of officers designated to a state - the cadre strength. This cadre strength is defined by the "cadre strength fixation rules", which reserves more officers for the larger states. These rules are seldom revised so the designated state cadre strength is fixed over longer periods. The vacancies are then broken down by quotas on two dimensions: caste and home preference. There are three categories for castes: General (unreserved) caste, Scheduled Caste/Tribes (SC/ST) and Other Backward Castes (OBC). The designation of vacancies to these caste categories are made based on predefined national quotas. The actual assignment of each vacancy to caste is randomized using a rotating roster. In terms of preferences, vacancies are broken down into "insider" and "outsider" vacancies. Insider vacancies are to be filled by officers from the same state who declared their home state preference at the time of application. The ratio of the insider to outsider vacancies is 1:2, with

[15] It is unlikely that officers are strategically misreporting their home state. The home state determination is based on the parental permanent address, as well as the state of birth and education - all of which need to be documented at the time of application. For 97% (92%) of officers in our sample, the declared home state matches the permanent address (current address) at time of application.

the assignment of vacancies to the "insider" or "outsider" category following the repeating sequence O-I-O. The determination of vacancies is shown in Appendix Figure A1. The result of this procedure is a list denoting the number of vacancies for each state and the corresponding quotas by caste (GEN/SC/ST/OBC) and home state (Appendix Figure A2).

3. The final allocation process is based on merit as determined by the ranking in the UPSC entry exam, the vacancies available and the home preference declared. Before the officers are allocated, the candidates are ranked and assigned a serial number in the order of merit, as determined by the UPSC entry exam. Appendix Figure A3 shows this ranking along with the officers' caste and home preference. The highest scoring candidate for the 2006 intake, for example, belongs to the OBC category and indicated a preference to be assigned to the home state of Andhra Pradesh.

The insider vacancies are allocated as far as exact matches along caste and home state preference (the allocation "bracket") permit. If the number of matches exceeds the vacancies, the higher ranking officer is given preference. Since the exact match along caste and home state is required for slotting, however, many insider vacancies typically remain unfilled. In this case, the caste requirement is successively relaxed, eventually opening to outsiders (See Appendix subsection A.1 for details).

The allocation of the "outsiders" and those who failed to be allocated to their preferred home state (and are consequently converted to outsiders) is done according to a rotating roster system. In brief, the rotating roster is designed to ensure that each state receives, on average, candidates of similar quality across years.[16]

The critical feature for our empirical strategy is that home state officers are grouped

[16]The exact details of the outsider allocation process are not directly relevant for our identification strategy and can be found in the Appendix subsection A.2.

and ranked within caste $\times$ home state brackets in each year of intake. The size of the bracket will vary across years depending on how many candidates from the same home state and caste pass the entry exam. Everything else equal, variation in the size of the bracket will therefore predict the propensity to receive a home allocation. This is the identifying source of variation we exploit. While the allocation rule for outsiders saw minor adjustments over time, this feature of the home state allocation has remained constant throughout the cohorts we study.

3 Empirical strategy

The empirical challenge to estimating the causal effect of home state allocations is that the assignment to home cadres is non-random. Under the allocation rule, higher ranked officers are given priority in their preference to be allocated to their home state. A comparison between home state vs. non-home state officers will thus be confounded by differences between high vs. low achieving officers, likely yielding upward biased estimates of the effects on bureaucratic performance.

3.1 Instrument and validity

Our empirical strategy exploits detailed institutional knowledge of the home state allocation rule: we argue and provide evidence that home state allocation is, conditional on the allocation rule, as good as randomly assigned. Specifically, we predict home state allocation using the fact that the ranking of officers for home state allocation occurs within pre-defined "brackets." Instead of giving officers priority in their home state preference in descending order of their overall rank, officers are ranked within brackets based on their year of intake, home state and caste (e.g. 2015-Gujarat-OBC). Depending on corresponding vacancies, officers are then slotted in descending order of rank within their bracket.

A key implication of this rule is that there will be variation in the number of officers

who qualify for home state allocations in the same bracket over time. To illustrate this, Figure 1 plots the number of home state allocations and the number of candidates for the Uttar Pradesh $\times$ Scheduled Caste & Tribe bracket for different years of intake. As the figure first shows, of course, home state allocations never occur in years when there is no selected Scheduled Caste & Tribe candidate from Uttar Pradesh. More importantly, it is apparent from the figure that the proportion of officers assigned to their home state is (mechanically) negatively correlated to the total number of officers in the same bracket.

To show this more generally, Figure 2 plots the probability of a home state allocation for a given officer as a function of the number of candidates in the same bracket relative to being a single candidate. Compared to a single candidate, having another candidate in the same bracket decreases the probability of a home state allocation by 16% points. The probability is 54% points lower when facing more than 8 other candidates. As the histogram shows, however, most of the variation in the number of candidates occurs between a single and two candidates. 42% of the allocation brackets comprise only a single candidate, and 21% contain two candidates. Only 9.6% of the brackets contain more than 8 candidates.[17]

In light of this, we propose to predict home state allocations using a dummy that equals 1 if the officer is the only candidate in his or her year of intake $\times$ home state $\times$ caste bracket, and 0 otherwise. This captures not only the relevant margin of variation but is also the simplest case: provided a vacancy is available, a single candidate officer who indicated a home preference will surely be allocated to the home state. This variation is exogenous and does not hinge on (potentially endogenous) home state preferences.[18] Instead, it depends solely on whether another applicant

[17] These brackets are located in large states such as Uttar Pradesh. The overall share of only candidates does not vary significantly across state population, development or corruption levels (Appendix Table B2).

[18] For the instrument to have a first stage, however, we require a sufficiently large number of officers to choose their home state. Given that nearly all officers declare their home state preference, it is not surprising that the first stage shown in Figure 2 and Table 3 is strong.

from the same caste and home state qualified for the service in the very same intake year. This itself depends on the results of the Civil Service Exam and the number of vacancies. Variation in these vacancies across years depends primarily on retirements. We find no evidence for strategic sorting in anticipation to variation in the number of vacancies (Appendix Table B1).

To provide systematic evidence for the validity of the instrumental variable strategy, Table 2, columns 3-4 compare individual characteristics of home vs. non-home officers within the same year of intake and home state $\times$ caste bracket. Column 3 shows the comparison using the actual home allocation status, and column 4 shows the comparison using the instrument. There remain differences between home vs. non-home officers even conditional on the selection bracket (column 3), but officers who are single candidate vs. multiple candidates are comparable on observables. This holds both on the individual-level and on the cohort-level, where cohort size and composition remain likewise comparable. The only statistically significant difference is on the likelihood of being female. Overall, however, we cannot reject the joint equality of means along the rich set of individual characteristics.[19]

3.2 First stage and effects on social proximity

We implement the first stage that predicts the home allocation for officer i using the following regression:

$$\text{home}_i = \beta \times \text{only}_{K(i)T(i)} + \delta' x_i + \nu_{K(i)} + \delta_{T(i)} + \varepsilon_i \tag{1}$$

where $\text{home}_i = 1$ if the officer i is allocated to the home state. The dummy $\text{only}_{K(i)T(i)}$ is 1 if the officer was the only candidate in the home state $\times$ caste cell $k = K(i)$ of the intake year $t = T(i)$. $\nu_{K(i)}$ are fixed effects for the allocation "bracket" (GEN,

[19] Our results also hold when confining the sample to only male officers (which comprise 86% of the officers in our sample). The female sample size is too small to be estimated separately.

OBC, SC/ST caste $\times$ home state) and $\delta_{T(i)}$ are intake year fixed effects. x_i are controls for individual characteristics: they include the UPSC entry exam score and rank, a female dummy, entry age, as well as controls for the educational and career backgrounds. These controls comprise dummies for having studied a STEM or Economics degree, for having received an academic distinction, as well as dummies for the previous types of jobs the officer held before entering the service.[20] The errors ε_i are clustered at the home state $\times$ caste $\times$ intake level. This corresponds to the level at which the identifying variation of the instrument varies.

Table 3 reports the estimates for Equation 1. Controlling for intake year fixed effects and home state $\times$ caste fixed effects, officers who entered the service as the single candidate in their bracket are 22.8% points more likely to be allocated to the home state (column 1). Given the exogenous nature of the variation in being the single candidate, the coefficient remains stable when controlling for a rich set of individual characteristics (column 2). The first stage is strong. Compared to the mean of the dependent variable, being an only candidate increases the probability of a home state allocation by 80%. Finally, column 3 also controls for variation in the officer's corresponding home state $\times$ caste bracket size in the two previous and future intake years. Reassuringly, it is only the contemporaneous bracket size that determines the propensity of a home state allocation. The estimates for the leads and lags are close to zero and insignificant (not reported for brevity). Overall, the results in Table 2 and Table 3 lend support to the validity of the instrument, providing evidence for a strong first-stage and balance across individual characteristics.

Having established the first-stage, Table 3, columns 4-5 show that home state assignments predicted using the instrument increase social proximity. As expected, home state allocated officers are more likely to serve closer to their home district, as measured by the distance (in miles) between the allocated state's administrative

[20]These jobs are grouped into: education/research, finance/banking, private/SOE, public, and public AIS (All India Service).

capital and the officer's home district capital. Those who entered as the only candidate are serving in states with state capitals that are, on average, 125 miles closer to their home district capital (column 4). This is an important metric as officers serve a majority of their later career assignments in the state capital. Geographic proximity is also highly correlated with social proximity. Boasting 23 official languages, there is substantial variation in the first languages spoken across India. Linguistic proximity is thus another important measure of social proximity. Indeed, as shown in column 5, only candidates are 20.7% points more likely to speak the allocated state's first language as their native language. The results thus consistently confirm the role of home allocations in increasing social proximity.

4 Home state allocation and performance

4.1 Main results

We estimate the effect of home state allocations by comparing officers who enter the service as the single candidate in their home state $\times$ caste bracket to officers who enter with multiple peers. Since the same officer i can be rated by multiple respondents, we augment Equation 1 using subscript j,

$$y_{ij} = \beta \times \widehat{home_i}(only_{K(i)T(i)}) + \delta' x_i + \theta_j + \nu_{K(i)} + \delta_{T(i)} + \varepsilon_{ij} \tag{2}$$

where y_{ij} is the performance score of the officer i given by survey respondent j in 2012-13.[21] We instrument home state allocation using a dummy that is 1 if the officer is the only candidate in the home state $\times$ caste bracket in that intake year, and 0 otherwise. As before, $\nu_{K(i)}$ is the fixed effect for the allocation "bracket" (caste $\times$ home state) and $\delta_{T(i)}$ are intake year fixed effects. The vector x_i contains the rich set of individual-level controls discussed in section 3. In addition, x_i contains

[21] We conduct the analysis at the respondent-officer (score) level as this allows us to partial out respondent-specific fixed effects. Our results, however, also hold on the individual-level Table B7.

state-specific tenure FEs to restrict the comparison to officers of the same seniority allocated to the same state.[22] In the most stringent specification, we also employ respondent fixed effects θ_j to partial out cross-respondent differences in the subjective survey measures. Finally, ε_{ij} is the error term which we cluster at the intake year $\times$ home state $\times$ caste level (the level at which the instrument varies) and the individual-level i (as a single officer is rated by several respondents).

The key parameter of interest is β, which captures the performance difference between home state vs. non-home state officers. Equation 2 makes precise where the identifying variation is coming from. Intuitively, we compare the outcomes of officers who are single candidates in their allocation bracket to those who are not, conditional on the selection rule, as implemented using the $\nu_{K(i)}$ fixed effects. Holding the home state $\times$ caste bracket constant, the identifying assumption is that variation in being a single candidate (or not) in the allocation bracket at entry into the service across different years of intake does not directly affect performance other than through the home state allocation rule.

There are several reasons why the exclusion restriction is likely to be met in this setting. Institutionally, being the only candidate in the caste $\times$ home state bracket in a given year has – beyond the assignment rule – no explicit role in the rules and regulations of the IAS. Empirically, there is also little evidence that suggests a violation of the exclusion restriction. As Table 2 shows, the instrument balances observable individual characteristics. Furthermore, being the only candidate in a selection bracket is also uncorrelated to the overall size and composition of the cohort, features that may determine the degree of competition, which may separately affect performance.[23] Importantly, our state-specific tenure fixed effects fully partial out cross-cohort level variation, restricting the identifying variation to comparisons of

[22] In the cross-section, these fixed effects nest the intake year fixed effects but the panel data in subsection 4.3 will allow us to separately identify tenure and cohort effects.

[23] Since career progression is seniority-based, competition among officers of the same year of entry is the main margin of competition (Bertrand et al., 2019).

home vs. non-home officers (or the instrument) in the same state and cohort.

Table 4 shows the main result. We first focus on the effectiveness score and then discuss each of the five outcome dimensions in turn. Columns 1-2 first report the OLS estimates. There is no significant difference in the effectiveness scores between officers allocated to their home state vs. those who hail from other states. This holds both with and without rich individual-level controls. Column 3 introduces the instrument, first reporting the reduced form effect of being the only candidate in the selection bracket on effectiveness. In contrast to OLS, those who enter as only candidates (and thus have a greater exogenous likelihood of receiving a home state allocation) have significantly lower effectiveness scores. This pattern is consistent with the hypothesized upward-bias of the OLS estimates. Since the allocation rule gives higher ranked officers preference (Table 2), an OLS comparison between home and non-home officers will be confounded by any differences correlated with entry exam scores, such as ability differences.

In column 4, we include the same set of individual-level characteristics as in column 2. Given the uncorrelatedness of the instrument with observable individual characteristics (Table 2), the resulting point estimates remain virtually unchanged. To ensure that the result is only driven by the variation in being the only candidate in the relevant year of intake, column 5 also controls for two period leads and lags. Given the random year-to-year variation in the number of candidates per selection bracket, the estimate remains unchanged. Finally, column 6 reports the IV estimate for the home state effect. Compared to a non-home state officer, those allocated to their home state score on average 0.284 points lower. This corresponds to a decrease by 0.27 SD or 7.6% when compared against the mean of the dependent variable. To put this magnitude in perspective, this is about half of the difference in mean effectiveness between a suspended vs. non-suspended officer.[24]

[24] A regression yields 0.555 SD, a sizeable effect (Appendix Table B3).

We now assess the other outcome dimensions of the 360 scores in Table 5. Panel A reports the IV estimates while Panel B reports the reduced form estimates.[25] All columns use the same specification, except that we vary the dependent variable to span the five dimensions of performance collected in our survey. Since we conduct tests on a larger set of outcomes, we report the false discovery rate (FDR) adjusted q-values to account for multiple hypothesis testing (Anderson, 2008).

We find that home allocated officers score lower across all outcome dimensions. They are perceived to be less effective, more corrupt, less able to withstand illegitimate political pressure, less pro-poor and also score worse when asked for their overall assessment. Since all scores are correlated, we average across all five standardized dimensions to create an overall index of performance (Column 6).[26] Once again, home allocated officers score worse overall.

4.2 Validating subjective measures and suspensions

While perceptions of bureaucrats are important *per se* for the legitimacy of the state, they may not necessarily reflect objective performance (Olken, 2009). A common concern is that subjective measures reflect "echo chambers" and hearsay.

Our survey respondents are experts who frequently interact and work with the civil servants we study. As such, we expect concerns of generic subjective biases to be more limited. Furthermore, the survey allows us to distinguish between assessments based on direct interactions (direct work collaborations) and indirect information obtained through friends, social networks or media. We also have information about the stakeholder type and respondents. We can thus probe the validity of our subjective measures by making use of rich information on the basis of the assessments, as well as *who* is providing the assessment.

[25] Appendix Table B4 reports the corresponding first stages for each of the columns.
[26] Using more involved methods such as principal component analysis does not change the results.

In Table 6, column 2, we include source of information fixed effects for whether the respondent has interacted with the rated officer personally, or knows about the officer through his social network (friends and coworkers) or the media. The resulting estimate remains almost identical. In column 3, we also include stakeholder fixed effects to distinguish between the respondent type (state civil servants, IAS officer, business, media, NGO representative or politician). The point estimate remains statistically comparable. Finally, we include respondent fixed effects. These fixed effects ensure that comparisons are only made among officers rated by the same respondent. This is a very restrictive specification, requiring respondents to have scored both officers entering as the only candidate and officers who entered with multiple candidates in the same selection bracket.[27] Despite the increasingly stringent specifications, the negative home state effect remains robust throughout.

In the appendix, we further assuage concerns over the interpretation of our measure. To ensure that the negative perceptions are not driven by home officers being allocated harder tasks or less popular positions, we ensured that the results remain comparable when including job title and pay level fixed effects (Appendix Table B5).[28] We also assessed whether home officers are held to a different standard by documenting that having excelled in the entry exam or being suspended is not perceived differentially by home status (Appendix Table B3, columns 3-4).[29] Furthermore, we find no evidence that home state officers are, on average, more likely to be known than non-home state officers (Appendix Table B6).

We complement the subjective measures by focusing on suspensions as a measure of corrupt behavior. Suspensions are rare outcomes. Most suspensions involve corruption scandals, with court cases pending against the officers, thus making it

[27] As a result, the estimate is only driven by assessments made by 75% of all respondents, thus substantially reducing the effective sample size that drives identification.

[28] Since the assignment to a position is an outcome, however, this robustness check conditions on an endogenous variable.

[29] If anything, respondents are *more favorable* towards home officers, in which case our negative performance results would be lower bound estimates.

an extreme measure of (non)-performance. Table 6, columns 5-6 report the results for the cross-section of officers in the year the survey was collected. We use the exact same sample and econometric specification to ensure comparability with the main results.[30] Consistent with the subjective scores, we find that home officers are more likely to be suspended. The difference remains identical when including the individual-level controls.[31] Overall, the findings thus provide a coherent picture consistent with the lower performance of home allocated officers.

4.3 State-level heterogeneity and corruption

Our results so far suggest that officers allocated to their home states are deemed to be lower performing across all outcome dimensions. There are competing views about the possible effects of home allocations on bureaucratic performance. On the one hand, bureaucrats could have more information about the local context, and find it easier to communicate with the citizens they are serving. Better information and lower communication costs may thus improve bureaucratic performance. Moreover, local bureaucrats may simply care more about helping the communities they are representing due to the personal ties they have to these communities. On the other hand, local officers may be more susceptible to capture by the political elite. Their deeper personal networks in the community they serve may also provide more opportunities for bribe taking as well as a more efficient technology for bribe extraction. We therefore explore several sources of heterogeneity to shed more light on the mechanisms underlying the effects.

If the negative performance is driven by the greater risk of political capture and op-

[30] Given the nature of the data, the analysis is conducted at the officer-level, and not the officer-score-level. For purpose of comparability, we also report the main performance results on the individual-level by averaging across all performance scores for each officer (Appendix Table B7).

[31] Suspensions also have limitations. Suspensions, in particular, may be politically motivated. Home officers, for example, are more likely to have local political affiliations, and could thus be more frequently targeted for political retribution irrespective of their actual performance. As we discuss in Bertrand et al. (2019), it is our lack of confidence in such measures that originally motivated the plan to introduce the subjective measurement framework.

portunities for corruption, we may expect the negative home effects to be larger in states with weaker institutions, where bureaucrats and politicians may have more discretion to bend the rules for their private benefits. Figure 3 breaks down the effect for the performance index by state to study the heterogeneity across India.[32] We focus on reduced forms as the corresponding first-stages are weaker due to the finer bins arising from having to estimate state-specific home state effects.[33] The figure shows the effect sizes ranked in ascending order. The figure reveals substantial state-level heterogeneity in the home state allocation effect. The negative home state effect is largest in Bihar, Rajasthan and Karnataka. In contrast, the effect is zero or positive in Punjab, Uttar Pradesh and Kerala.

We use an independent state-level measure of corruption to divide the states into those who rank above and below average to study whether the observed state-level heterogeneity is systematically related to local conditions. We follow the literature by using the Transparency International Index used by Fisman et al. (2014). As shown in Figure 3, states with above average corruption levels are marked in black, and those with below average levels are shown in gray. The visual evidence suggests that the negative home state effects are indeed concentrated among states that exhibit above average levels of corruption.

To test this formally, Table 7 interacts the instrument with a continuous measure of the state-level corruption index. To ease the interpretation of the results, the state-level index is standardized and centered around the sample mean. Confirming the visual evidence, the negative effect on average performance is significantly driven by the states with higher state-level corruption levels (columns 1-2). We also include the interaction with the Human Development Index in 2007 to assess whether

[32] The analysis is restricted to the 14 larger states for which we collected survey data.

[33] In order to estimate the IV specification, we would need one instrument for each state, instrumenting the endogenous variables $home_i \times$ State FEs with the instrument interacted by each state dummy $only_{K(i)T(i)} \times$ State FEs. This creates a weak instrument (Bound et al., 1995) and we thus resort to reduced forms.

the corruption measure is picking up cross-state differences in economic development. While we cannot rule out unobservable correlates, the role of corruption in magnifying the negative impact of home state allocations is strikingly persistent even after holding constant differences in development (column 3). These results are consistent across all performance dimensions (Appendix Table B8).

Finally, we complement our subjective measures with suspensions. In the remaining columns 4-5 of Table 7, we use the executive record sheets to extend the cross-section of Table 6 into an individual-year panel for 1980-2019. We focus on suspensions as a measure of corrupt behavior. While home state officers are not differentially likely to be suspended on average, their suspension probability increases significantly in states that score higher on the corruption index. An increase in the state-level corruption index by 1 SD increases the differential suspension rate for home state officers by 0.4% points (Column 4). Finally, Column 5 interacts the instrument with the state-level HDI. The results remain robust using suspensions as a direct measure of performance, alleviating measurement concerns.

4.4 Home state effects by seniority

We are interested in how the career dynamics between home vs. non-home officers unfold. If the negative home state effect is driven by greater familiarity and a large number of pre-existing social ties, we may expect the gap to close as non-home state officers accumulate more state-specific information and social capital. To study individual-level heterogeneity across different career stages, we flexibly estimate the reduced form home state effect by seniority. We bin the years of service into the seniority groups associated with each of the seven payscales. Specifically, we split the overall tenure period into seven bins that mirror the time-based payscale progression: 1-3 years (Payscale 1), 4-8 years (Payscale 2), 9-12 years (Payscale 3), 13-15 years (Payscale 4), 16-24 years (Payscale 5), 25-29 years (Payscale 6), and

more than 30 years (Payscale 7). Motivated by the state-level heterogeneity, we further divide the sample into states that score above average on the corruption index (high), and states that score below average (low).

The resulting estimates are shown in Figure 4. The figure shows the cross-sectional relationship between the average performance index and the years of service, estimated separately for high vs. low corruption states.[34] The estimates are derived from an augmented specification of Equation 2 where we allow the reduced form effect of home state allocations to vary by the payscale bins.[35] Since the performance scores are only collected for those who have served for more than 8 years, we report the estimates from the third payscale (9-12 years) onward. As the figure shows, the negative home state performance effect is driven by the states with higher levels of corruption. While home officers score, if anything, slightly higher than non-home officers in states with below average levels of corruption, home officers score consistently lower than non-home officers in states with above average corruption. The negative performance difference between home vs. non-home officers does not converge with seniority but opens up in the highest payscale.

A limitation in this cross-sectional setting is that we cannot separately identify seniority from cohort effects. We can, however, address such concerns by leveraging panel data from the personnel records which allows us to disentangle cohort and seniority effects. These results are shown in the remaining panels of Figure 5, Panels A and B. We use the same regression as in the cross-section, except that we include year and intake year fixed effects to adjust for the panel dimension. Due to the rare occurrences of suspensions and the smaller number of very senior officers,

[34] While our panel covers 1980-2019, the cross-sectional corruption measure is for 2005 and as such not predetermined. The implicit assumption for the panel analysis is that the ranking of the states remained stable over time. We find support for this assumption when comparing the rank correlation between Transparency International's 2005 and 2019 measures. Despite using a different methodology and collected 14 years later, the rank correlation is 0.56.

[35] These results are also reported in Appendix Table B9, columns 1-2 in regression form.

we combine the senior-most two payscales.[36] Figure 5, Panel A shows the differential suspension probability between home vs. non-home officers (in reduced form) by seniority, broken down by high vs. low corruption states. Despite the small number of suspension events, the observed pattern is consistent with the cross-sectional result: while there is almost no difference in suspension rates for the bulk of the career, home officers in high corruption states are substantially more likely to be suspended than non-home officers in the highest two payscales (after more than 25 years tenure). In contrast, home officers are – if anything – less likely to be suspended in the states that score lower on the corruption index. Given the low number of overall suspensions, however, these estimates are relatively noisy.

We complement our subjective performance and suspension measures with another widely used measure of career performance: serving at the central government. Officers can be "empaneled" to serve the central government at the additional secretary, joint secretary and secretary-level. Allowing officers to serve the central government is meant to create national cohesion and maintain the connection between the federal and state-level administration. Since the assignment of officers to states is life-long, serving the central government in Delhi is one of the few channels through which officers can leave their assigned state. Central government postings require a performance review, are prestigious and therefore viewed as gauges of how well an officer is doing within the service (Iyer and Mani, 2012). Since all officers go through the review process but officers can choose to take up a central government posting if selected, it is a combined measure of performance and revealed choice to remain in the allocated state.[37] As Figure 5, Panel B shows, home state officers are only less likely to serve the central government in states that score high on the corruption index. If anything, home state officers are *more* likely

[36] See Appendix Table B9, columns 3-6.

[37] For the subsample for which we have data on empanelment outcomes, we find that home officers are less likely to be empaneled (Appendix Table B11). In line with Iyer and Mani (2012), this further corroborates the interpretation of central government service as a measure of performance.

to serve the central government in states with low corruption levels. As before, the gap opens up over time and is largest in the highest payscale. Overall, the results suggest that the home state effect remains large throughout the entire career.

To provide a measure of private returns, we also collected data on assets following Fisman et al. (2014). Each year, officers are required to submit an "immovable properties returns" (IPR) sheet by the 31st of January (Rule 16(2) AIS, 1968).[38] Officers are required to list the land and properties inherited, owned, and acquired either in their own name or the name of a close family member. This includes information about the location, the size and the value of the property. Failure to submit the returns can, in theory, result in sanctions such as the withholding of appointments. In reality, however, asset returns are frequently submitted late or not at all. When matching the personnel records with the asset returns in 2012 – the year of the performance survey – we obtain a match rate of 62%. Consistent with previous cuts, we find that – among officers we were able to match – home state officers tend to report higher asset values (Appendix Table B10). In contrast to higher quality data on politicians (Fisman et al., 2014), however, the asset returns for officers are often incomplete or only list approximate values of the properties. We thus interpret the results as suggestive, but complementary evidence consistent with greater tangible private returns for home allocated officers.

4.5 Cohort-level exposure to home officers

We now exploit within-home state variation to ask whether the extent to which peers hail from the same state differentially affects bureaucrat performance. Per quota, the share of home officers is set to 1/3 in any cohort. Whether this quota is binding depends on the number of home officers who qualify for the service in the first place. There thus exists year-on-year variation in the total number of home officers allocated to a given state cadre. We exploit this variation to ask whether home

[38] The IPR sheets can be accessed via http://ipr.ias.nic.in/StartIPR.htm

officers exposed to a larger number of same state officers score differentially.

Table 8 shows the results. In column 1, we provide the benchmark result. In column 2, we allow the effect of the instrument to vary by the number of other home officers in the cohort. Interestingly, we find that the negative home state effect increases with the cohort-level exposure to other home state officers. This is not driven by a mechanical relationship between cohort size and the number of home officers. In column 3, we allow the instrument to vary by each level of cohort size using flexible fixed effects. The interaction between the number of other home officers and being a home officer oneself remains negative and significant.

Finally, columns 4-5 once again divide the sample into states that score above and below average in the state-level corruption index. As before, it is only in the high corruption states where we observe the negative peer effect coming from a larger number of home officers. In low corruption states, there is no statistically significant effect. We show this relationship visually in Figure 6. In above average corruption states, the negative home state effect increases with the number of other home state officers in one's cohort; in contrast, exposure to a larger number of home state officers has – if anything – a slightly positive impact.

5 Conclusion

Bureaucrats are an important determinant of state capacity. The question of how to recruit and motivate them has thus sparked a vibrant literature on the selection and incentives of public servants. Yet, how to allocate already selected talent has remained an understudied margin for improving public sector performance. In this paper, we ask if matching bureaucrats to the places they originate from would enhance or depress their performance. All centralized bureaucracies face the question of whether to allow officers to serve their home localities.

We make progress by combining detailed institutional knowledge with unique data to study the IAS - the elite civil service and "steel frame" of India. We isolate a rare, rule-based source of exogenous variation that governs the assignment of officers across India. Linking this variation in home assignment to a large survey on the performance of officers, as well as to rich administrative data from their training academy, allows us to study the performance effects on the allocation margin. We therefore overcome two key challenges in the study of allocation effects in bureaucracies: the absence of exogenous variation in the assignment of officers to work environments; and the difficulty of measuring performance among generalists who rotate across a wide range of positions and tasks over their careers.

Our main finding is that home-allocated officers score worse overall in terms of performance. This average effect masks substantial heterogeneity: when we study state-level heterogeneity in the home allocation effects, we find that the negative effects are only driven by states associated with higher levels of corruption. Furthermore, we find that the negative effects are most pronounced in the later career stages where officers are heading up key ministries and departments at the state-level. Importantly, differences in perceived performance go with tangible differences in career outcomes. Home officers are more likely to be suspended and less likely to serve at the central government. Finally, home officers are particularly low performing when serving with a larger number of same state officers. Once again, this negative effect is only driven by the high corruption states, suggesting an important role of the local environment in shaping whether home ties can be leveraged for performance.

These findings complement the growing literature that studies how social proximity affects the performance of individuals in private organizations (Fisman et al., 2017). The results also have resonance for a whole host of less developed countries that are in the process of building state capacity (Besley and Persson, 2009). Whether governments can leverage home allocations for greater performance may

depend crucially on the quality of local governance. The paper contributes to opening up a new direction of research on how to allocate already-recruited talent across a national geography which is separate from the literature on selection and incentives that has dominated the modern literature on bureaucracy. What is exciting about this research is that it suggests that gains in performance may be had from re-allocating *existing* talent – potentially at little additional fiscal cost.

While our study has not moved beyond studying individual performance, the results raise the intriguing question whether the observed individual-level allocation effects can translate into aggregate outcomes. History tells us that countries bereft of a coherent and motivated set of bureaucrats who can implement national policies in a coordinated fashion are unlikely to make the transition to industrialized states. More research will be required to identify different pathways to developing effective national bureaucracies – but what is incontrovertible is that there are few issues in the study of state capacity that are more important.

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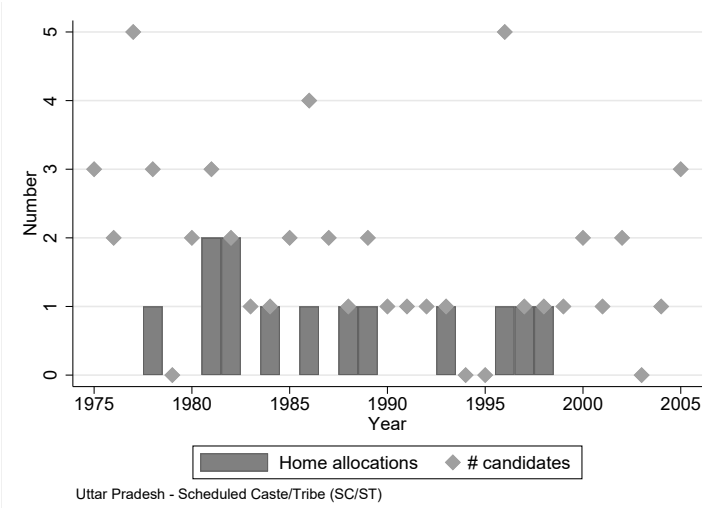
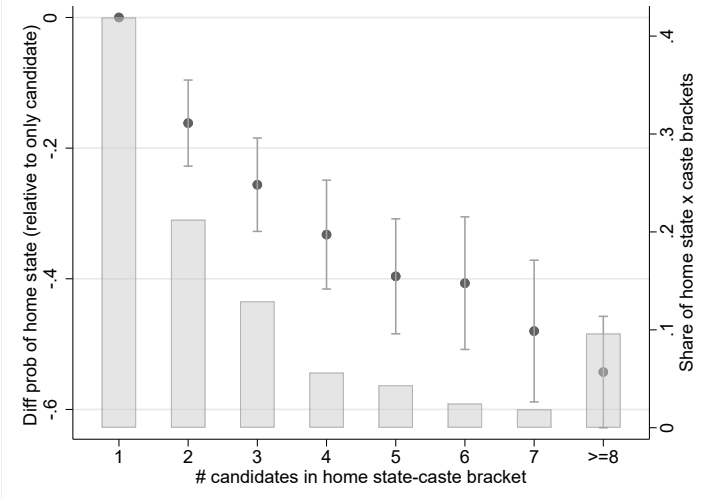
Figures

Figure 1: Home state allocation and allocation bracket size



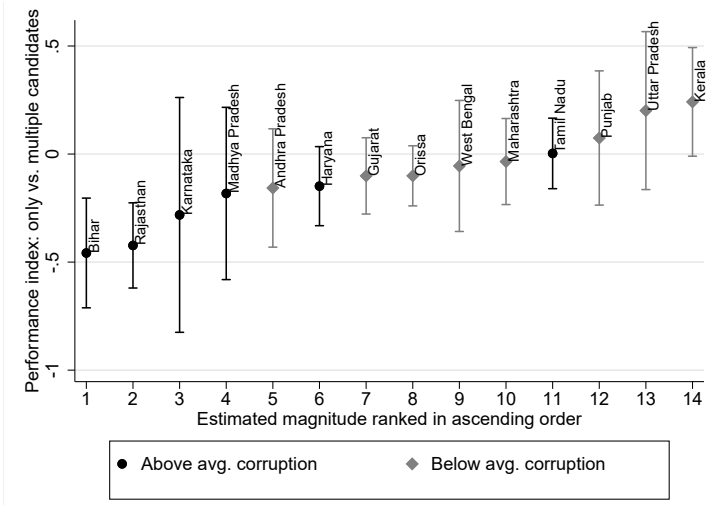
Notes: Bar chart shows the number of home state allocations among Scheduled Castes/Tribes in Uttar Pradesh 1975-2015. Scatter shows the number of potential candidates in the home state allocation bracket Uttar Pradesh-Scheduled Castes/Tribes (SC/ST) in a given year of intake.

Figure 2: Predicting home state allocation using allocation bracket size



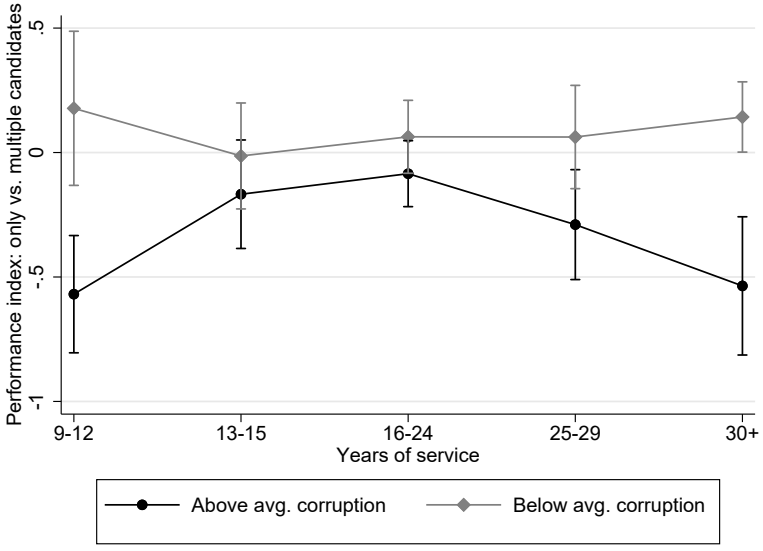
Notes: Relating home state allocation to the number of candidates in the same home state × caste × intake year bracket. Estimates are based on regressing home state allocation on dummies for the number of candidates in the same home state × caste × intake year bracket, intake year FEs and home state × caste FEs. Omitted category is being the only candidate. 95% confidence intervals, with standard errors clustered at the home state × caste × intake year level. The gray bars show the distribution of the bracket sizes.

Figure 3: Performance and only candidate effect by allocated state



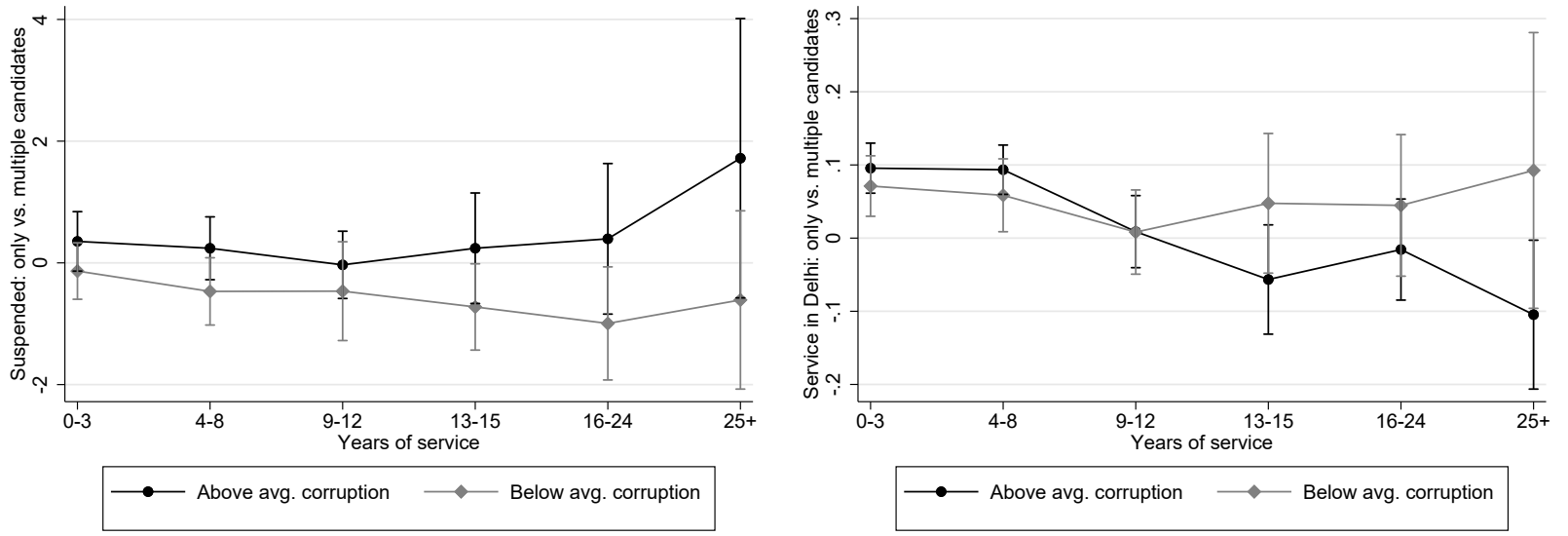
Notes: Reduced form effect of only candidate (instrument for home allocations) on the performance index, estimated for each major state of India by interacting only candidate × state dummies. *Only candidate* is a dummy that is 1 if the officer is the only candidate in the same home state × caste × intake year bracket. 95% confidence intervals based on standard errors clustered at the home state × caste × intake year and the officer-level.

Figure 4: Performance and career progression



Notes: The dependent variable is the cross-sectional performance index. The coefficients are estimated using a flexible version of Table 5, Panel B, Column 6, where the coefficient of interest varies by seniority. See Appendix Table B9 for the regression tables corresponding to the figures. 95% confidence intervals based on standard errors clustered at the home state × caste × intake year and the officer-level.

Figure 5: Home state allocation, suspensions and service in Delhi



(a) Suspension

(b) Service in Delhi

Notes: Differences in suspension and service in Delhi between only candidates vs. multiple candidates (reduced form for home vs. non-home officers) by years of service, broken down by officers allocated to above/below mean corruption states (state-level TI index, see Fisman et al. (2014)). In **Panel A**, the dependent variable is a dummy that is 1 if the officer was suspended in a given year. In **Panel B**, the dependent variable is 1 if the officer was serving at the central government. See Appendix Table B9 for the regression tables corresponding to the figures. 95% confidence intervals based on standard errors clustered at the home state × caste × intake year and the officer-level.

Figure 6: Performance and cohort-level exposure to home officers

Notes: Reduced form effect of only candidate (instrument for home allocations) on the performance index, estimated by the number of other home state officers in the cohort and above/below mean corruption-level states (state-level TI index, see Fisman et al. (2014)). *Only candidate* is a dummy that is 1 if the officer is the only candidate in the same home state × caste × intake year bracket. 95% confidence intervals based on standard errors clustered at the home state × caste × intake year and the officer-level.

Tables

Table 1: Descriptive statistics for the performance scores

	(1) Mean	(2) SD	(3) Ratings	(4) Officers	(5) Coverage
Withstanding illegitimate pressure	3.523	1.094	16,728	1,471	71.96%
Probity of IAS officer	3.670	1.105	15,153	1,451	70.98%
Effectiveness on the job	3.730	1.077	17,753	1,472	72.01%
Sensitive towards poorer	3.527	1.141	17,047	1,471	71.96%
Overall rating	3.646	1.057	17,698	1,472	72.01%

Notes: Performance scores for the cross-section of rated officers in 2012-13. Reporting the descriptive statistics (mean and standard deviation) for the measures, where the scores range from 1 (lowest) to 5 (highest). Column 3 and 4 report the total number of ratings and the total number of rated officers. Column 5 reports the coverage rate for the sample population of all active, centrally recruited officers with at least 8 years of service in 2012/13.

Table 2: Officer characteristics by home state allocation and instrument

Means	(1) Mean Home state	(2) Home - non-home Mean diff	(3) Home - non-home Within bracket	(4) Only - many candidates Within bracket
Entry (UPSC) exam score	-0.116	0.419***	0.605***	0.001
		(0.056)	(0.044)	(0.069)
Entry (UPSC) exam rank	44.483	-11.607***	-21.802***	-1.741
		(1.732)	(1.368)	(1.990)
Female	0.107	-0.027	-0.036**	0.067*
		(0.017)	(0.018)	(0.035)
Urban background	0.728	0.006	0.003	0.007
		(0.022)	(0.024)	(0.039)
Age at entry	25.443	0.261**	-0.224**	0.061
		(0.112)	(0.108)	(0.205)
Distinction	0.326	0.004	0.002	0.044
		(0.024)	(0.026)	(0.043)
STEM or Economics	0.590	-0.025	0.017	0.006
		(0.025)	(0.026)	(0.045)
Previous job: Education/Research	0.173	0.026	-0.008	0.013
		(0.018)	(0.020)	(0.028)
Previous job: Finance/Banking	0.055	0.006	-0.004	-0.005
		(0.011)	(0.012)	(0.020)
Previous job: None	0.294	0.005	0.018	-0.016
		(0.023)	(0.025)	(0.041)
Previous job: Private/SOE	0.114	-0.003	0.004	0.004
		(0.016)	(0.018)	(0.032)
Previous job: Public	0.326	-0.018	0.003	-0.011
		(0.024)	(0.026)	(0.046)
Previous job: Public - AIS	0.034	-0.005	-0.013	0.014
		(0.009)	(0.010)	(0.015)
Cohort size	7.685	1.379***	1.003***	0.149
		(0.200)	(0.388)	(0.264)
Caste fractionalization	0.326	-0.017	0.025**	0.004
		(0.011)	(0.011)	(0.017)
Other Backward Caste (OBC)	0.059	-0.059***	-	-
		(0.015)		
Scheduled Caste (SC)	0.168	0.052***	-	-
		(0.017)		
Scheduled Tribe (ST)	0.078	0.019	-	-
		(0.012)		
Intake year FEs			Y	Y
Home state-Caste FEs			Y	Y
Diff jointly zero: p-value		0.000***	0.000***	0.504
Observations		1,888	1,880	1,880

Notes: Unit of observation is the officer. Columns 1 shows the mean characteristics for those who received the home allocation. Column 2 is the raw difference in means between home and non-home allocated officers. Column 3 shows the mean difference among officers of the same selection bracket (intake year and home state × caste category). Column 4 shows the mean difference using the instrument *only candidate* vs. *multiple candidates* among officers of the same selection bracket. The instrument *only candidate* is a dummy that is 1 if the officer is the only candidate in the home state × caste × intake year bracket. *UPSC Rank* is the Union Public Civil Service entry exam rank in the intake year. *Distinction* is a dummy that is 1 if the officer received an academic distinction. *STEM* is a dummy that is 1 if the officer studied a STEM or Economics degree. *Previous job:* are categories for the previous positions the officer held before entering the service. *Cohort size* is the total number of officers allocated to same state in same year. *Caste fractionalization* is the fractionalization index for the cohort based on the caste categories. Robust standard errors for Columns 3-4. For column 5, the standard errors clustered at the home state × caste × intake year level, reflecting the level at which the instrument varies. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: Predicting home state assignment and social proximity with instrument

	(1)	(2)	(3)	(4)	(5)
	Allocated to home state			Distance home district	Same language
Mean of dep. var	0.277	0.277	0.285	455.8	0.388
Only candidate	0.228***	0.234***	0.267***	-124.967***	0.207***
	(0.042)	(0.043)	(0.047)	(31.590)	(0.046)
Home state × Caste FEs	Y	Y	Y	Y	Y
Intake year FEs	Y	Y	Y	Y	Y
Individual controls		Y	Y	Y	Y
Leads and lags (2)			Y		
Observations	1,880	1,880	1,712	1,638	1,868

Notes: Unit of observation is the officer. Relating home state allocation (Columns 1-3) and measures of social proximity (Columns 4-5) to the instrument. The instrument *only candidate* is a dummy that is 1 if the officer is the only candidate in the home state × caste × intake year bracket. Column 3 also includes the two year leads and lags of the variable. The dependent variable distance to home district is the distance (in miles) between the allocated state's state capital and the officer's home district. Same language is a dummy that is 1 if the officer's mother tongue is the first official language in the state. Individual controls are: entry exam score and rank, age at entry, female dummy, a dummy for coming from an urban background, having received an academic distinction, a STEM or Economics degree, dummies for previous job type. Standard errors clustered at the home state × caste × intake year level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Bureaucrat effectiveness and home state allocation

	(1)	(2)	(3)	(4)	(5)	(6)
	Subjective performance: Effectiveness					
Mean of dep. var	3.730	3.730	3.730	3.730	3.725	3.730
Home state	-0.002	-0.008				-0.284**
	(0.023)	(0.030)				(0.136)
Only candidate			-0.100**	-0.101**	-0.103**	
			(0.046)	(0.045)	(0.046)	
Kleibergen-Paap F-stat						46.897
Estimation	OLS		Reduced form			IV
Caste × Home state FEs	Y	Y	Y	Y	Y	Y
Intake year × State FEs	Y	Y	Y	Y	Y	Y
Individual controls		Y		Y	Y	Y
Leads and lags (2)					Y	
Observations	17,747	17,747	17,747	17,747	17,247	17,747

Notes: Unit of observation is the score for a given officer in 2012-13 with at least 8 years of tenure. Relating five measures of perceived performance (effectiveness, probity, ability to withstand illegitimate political pressure, pro-poor orientedness and overall rating) and the average index (averaged across all five standardized dimensions) to home state allocation. *Home state* is a dummy that is 1 if the officer is allocated to his or her state of origin. *Only candidate* is a dummy that is 1 if the officer is the only candidate in the home state × caste × intake year bracket. Individual controls are: entry exam score and rank, age at entry, female dummy, a dummy for coming from an urban background, having received an academic distinction, a STEM or Economics degree, dummies for previous job type. Standard errors clustered at the home state × caste × intake year and officer-level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: All 360-degrees dimensions and home state allocation

	(1)	(2)	(3)	(4)	(5)	(6)
	Subjective performance ratings					Perf.
	Effective	Probity	Pressure	Pro-poor	Overall	Index
Mean of dep. var	3.730	3.671	3.523	3.528	3.647	0.000
Panel A: IV						
Home state	-0.284**	-0.300**	-0.479***	-0.329**	-0.341*	-0.308**
	(0.136)	(0.148)	(0.162)	(0.151)	(0.183)	(0.128)
	[0.054]	[0.054]	[0.015]	[0.054]	[0.064]	
Kleibergen-Paap F-stat	46.403	59.348	46.897	46.216	45.381	58.090
Panel B: Reduced form						
Only candidate	-0.101**	-0.114**	-0.171***	-0.115**	-0.120**	-0.117***
	(0.045)	(0.052)	(0.048)	(0.050)	(0.059)	(0.044)
	[0.037]	[0.037]	[0.001]	[0.037]	[0.044]	
Home state × Caste FEs	Y	Y	Y	Y	Y	Y
Intake year × State FEs	Y	Y	Y	Y	Y	Y
Individual controls	Y	Y	Y	Y	Y	Y
Observations	17,747	15,145	16,721	17,041	17,692	14,027

Notes: Unit of observation is the score for a given officer in 2012-13 with at least 8 years of tenure. Relating five measures of perceived performance (effectiveness, probity, ability to withstand illegitimate political pressure, pro-poor orientedness and overall rating) and the average index (averaged across all five standardized dimensions) to home state allocation. *Home state* is a dummy that is 1 if the officer is allocated to his or her state of origin. *Only candidate* is a dummy that is 1 if the officer is the only candidate in the home state × caste × intake year bracket. **Panel A** presents the IV results, and **Panel B** presents the reduced form estimates. Individual controls are: entry exam score and rank, age at entry, female dummy, a dummy for coming from an urban background, having received an academic distinction, a STEM or Economics degree, dummies for previous job type. Standard errors clustered at the home state × caste × intake year and officer-level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. False discovery rate (FDR) adjusted q-values are reported in brackets.

Table 6: Assessing subjective bias and suspension as direct measure

	(1)	(2)	(3)	(4)	(5)	(6)
	Performance index (standardized)				Suspended in 2012	
Mean of dep. var.	0.000	0.000	0.000	0.000	0.0114	0.0114
Only candidate	-0.117***	-0.113***	-0.097**	-0.088***	0.031*	0.031*
	(0.044)	(0.044)	(0.043)	(0.033)	(0.016)	(0.016)
Home state × Caste FEs	Y	Y	Y	Y	Y	Y
Intake year × State FEs	Y	Y	Y	Y	Y	Y
Individual controls	Y	Y	Y	Y		Y
Source of information FEs		Y	Y	Y		
Stakeholder FEs			Y			
Respondent FEs				Y		
Observations	14,027	14,027	14,027	14,003	1,847	1,847

Notes: Unit of observation is the score for a given officer in 2012-13 with at least 8 years of tenure. Relating the performance index to the instrument for home state allocation. The instrument *only candidate* is a dummy that is 1 if the officer is the only candidate in the home state × caste × intake year bracket. Individual controls are: entry exam score and rank, age at entry, female dummy, a dummy for coming from an urban background, having received an academic distinction, a STEM or Economics degree, dummies for previous job type. *Source of information FEs* are dummies for whether the source of information is based on personal interaction, friends, colleagues, social networks or media. *Stakeholder FEs* are dummies for whether the respondent is a state civil servant, an IAS officer, or a representative of a large firm, media, NGO or an MLA (politician). *Respondent FEs* are fixed effects for each respondent. Standard errors clustered at the home state × caste × intake year and officer-level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: Performance, suspensions and state-level corruption

	(1)	(2)	(3)	(4)	(5)
	Performance index			Suspended	
Mean of dep. var	0.000	0.000	0.000	0.791	0.791
Only candidate	-0.117***	-0.107**	-0.106**	-0.022	-0.019
	(0.044)	(0.045)	(0.044)	(0.267)	(0.265)
× TI corruption index		-0.147***	-0.133***	0.394**	0.499**
		(0.037)	(0.047)	(0.176)	(0.217)
× HDI			0.020		0.149
			(0.043)		(0.252)
Home state × Caste FEs	Y	Y	Y	Y	Y
Intake year × State FEs	Y	Y	Y	Y	Y
Individual controls	Y	Y	Y	Y	Y
Year FEs				Y	Y
Sample	Cross-section			Panel	
Observations	14,027	12,982	12,982	42,076	42,076

Notes: Unit of observation is the score for a given officer in 2012-13 with at least 8 years of tenure (columns 1-3) and the officer-year for the time period 1980-2019 (columns 4-5). Relating the performance index and suspensions to home state allocation. In columns 4-5, the dependent variable suspended is a dummy that is 1 (scaled by 100) if the officer was suspended in a given year. The instrument *only candidate* is a dummy that is 1 if the officer is the only candidate in the home state × caste × intake year bracket. *TI corruption index* is the state-level Transparency International corruption index from 2005 as used by (Fisman et al., 2014). The *HDI* is the state-level Human Development Index in 2007. Caste FEs are dummies for OBC, SC, ST. Individual controls are: entry exam score, fixed effects for each rank in the entry exam, age at entry, female dummy, a dummy for coming from an urban background, having received an academic distinction, a STEM or Economics degree, dummies for previous job type. Standard errors clustered at the home state × caste × intake year and officer-level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

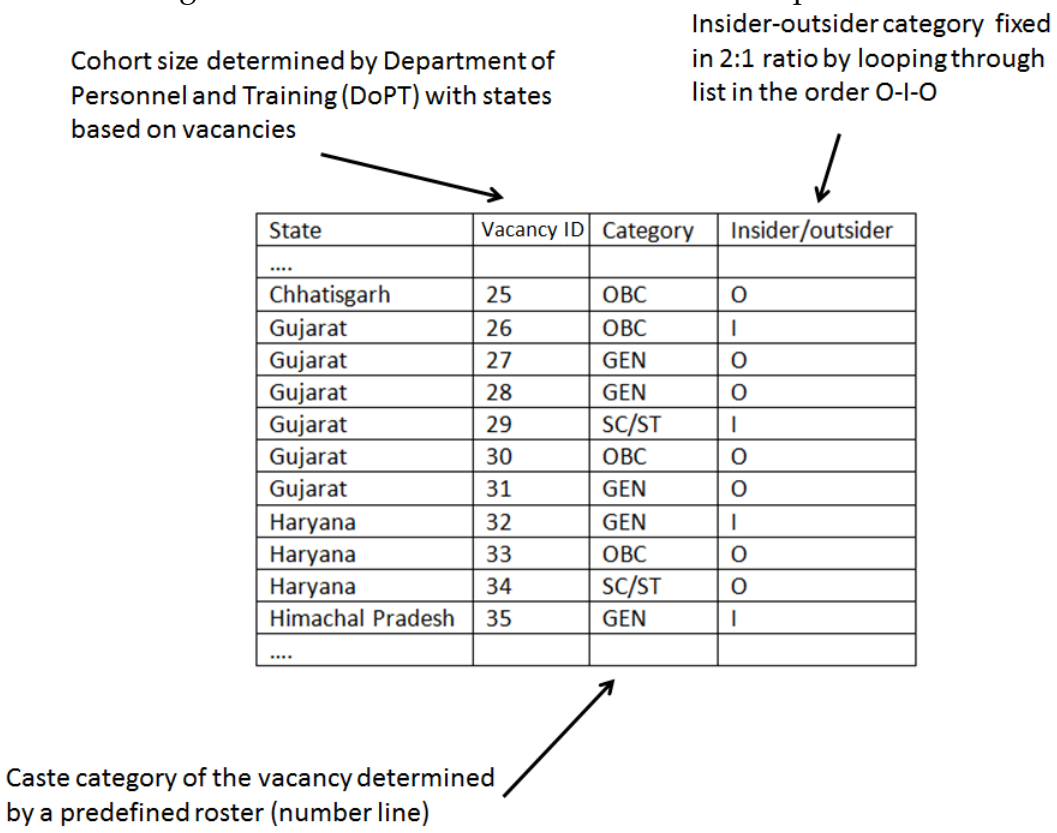
Table 8: Performance and cohort-level exposure to home officers

	(1)	(2)	(3)	(4)	(5)
			Performance index		
	0.000	0.000	0.000	0.162	-0.203
Only candidate	-0.117***	-0.040			
	(0.044)	(0.049)			
# home officers in cohort		-0.003	-0.003	-0.033	0.032
		(0.018)	(0.018)	(0.025)	(0.028)
# home officers in cohort × Only candidate		-0.060*	-0.084*	-0.092*	-0.038
		(0.036)	(0.043)	(0.055)	(0.070)
Home state × Caste FEs	Y	Y	Y	Y	Y
Intake year × State FEs	Y	Y	Y	Y	Y
Individual controls	Y	Y	Y	Y	Y
Cohort size FEs × Only candidate			Y	Y	Y
Sample	Full sample			State-level corruption	
				Above	Below
Observations	14,027	12,889	12,889	7,173	5,716

Notes: Unit of observation is the score for a given officer in 2012-13 with at least 8 years of tenure. Relating the performance index to the instrument for home state allocation. The instrument *only candidate* is a dummy that is 1 if the officer is the only candidate in the home state × caste × intake year bracket. *# home officers in cohort* is the number of home officers (excluding self) in the intake year × state. Columns 4-5 split the sample by whether the state scored above (high) or below (low) average on the state-level Transparency International corruption index from 2005 as used by Fisman et al. (2014). Caste FEs are dummies for OBC, SC, ST. Individual controls are: entry exam score and rank, age at entry, female dummy, a dummy for coming from an urban background, having received an academic distinction, a STEM or Economics degree, dummies for previous job type. Standard errors clustered at the home state × caste × intake year and officer-level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

A Online Appendix - Not for Publication

Figure A1: Determination of vacancies: Example 2006



State	Vacancy ID	Category	Insider/outsider
....			
Chhatisgarh	25	OBC	O
Gujarat	26	OBC	I
Gujarat	27	GEN	O
Gujarat	28	GEN	O
Gujarat	29	SC/ST	I
Gujarat	30	OBC	O
Gujarat	31	GEN	O
Haryana	32	GEN	I
Haryana	33	OBC	O
Haryana	34	SC/ST	O
Himachal Pradesh	35	GEN	I
....			

Notes: Illustrating the assignment of categories (caste and home preference) to vacancies through the roster randomization for the year 2006. Vacancies are earmarked by caste status (O.B.C. denotes other backward castes, S.C./S.T. scheduled castes/tribes and unreserved the general castes) and home state ("I" denotes insider vacancies reserved for applicants from the same state; "O" denotes outsider vacancies reserved for applicants from other states).

Figure A2: Assignment of categories (caste and home status) to vacancies through roster randomization

Cadre Allocation - 2006

Distribution of vacancies to be filled in various cadres/joint cadres of Indian Administrative Service (IAS) on the basis of Civil Services Examination 2006, among Insider and Outsider Vacancies and between categories.

Sl. No.	Name of the State Cadre / Joint Cadre	Unreserved Insider	Unreserved Outsider	OBC Insider	OBC Outsider	SC/ST Insider	SC/ST Outsider	Total
1	A G M U T	1	2	1	0	0	1	5
2	Andhra Pradesh	1	1	0	0	0	0	2
3	Assam Meghalaya	1	2	0	1	1	0	5
4	Bihar	2	1	0	2	1	1	7
5	Chhatisgarh	0	3	1	1	1	0	6
6	Gujarat	0	3	1	1	1	0	6
7	Haryana	1	0	0	1	0	1	3
8	Himachal Pradesh	1	0	0	0	0	0	1
9	Jammu & Kashmir	0	1	0	0	0	0	1
10	Jharkhand	0	1	0	0	0	0	1
11	Karnataka	0	1	1	0	0	1	3
12	Kerala	1	0	0	1	0	0	2
13	Madhya Pradesh	2	1	0	1	0	1	5
14	Maharashtra	1	2	0	1	1	0	5
15	Manipur Tripura	0	3	0	1	1	0	5
16	Nagaland	0	1	0	1	1	0	3
17	Orissa	1	1	0	1	0	1	4
18	Punjab	0	1	1	0	0	1	3
19	Rajasthan	0	1	1	0	0	1	3
20	Sikkim	0	0	1	0	0	1	2
21	Tamil Nadu	0	1	1	0	0	0	2
22	Uttar Pradesh	1	2	0	2	1	1	7
23	Uttaranchal	1	0	0	1	0	1	3
24	West Bengal	0	3	1	0	0	1	5
		14	31	9	15	8	12	89

Notes: The final distribution of vacancies by state and caste/home quota for the year 2006. Vacancies are earmarked by caste status (O.B.C. denotes other backward castes, S.C./S.T. scheduled castes/tribes and unreserved the general castes) and home state (insider vacancies are reserved for applicants from the same state; outsider vacancies are reserved for applicants from other states).

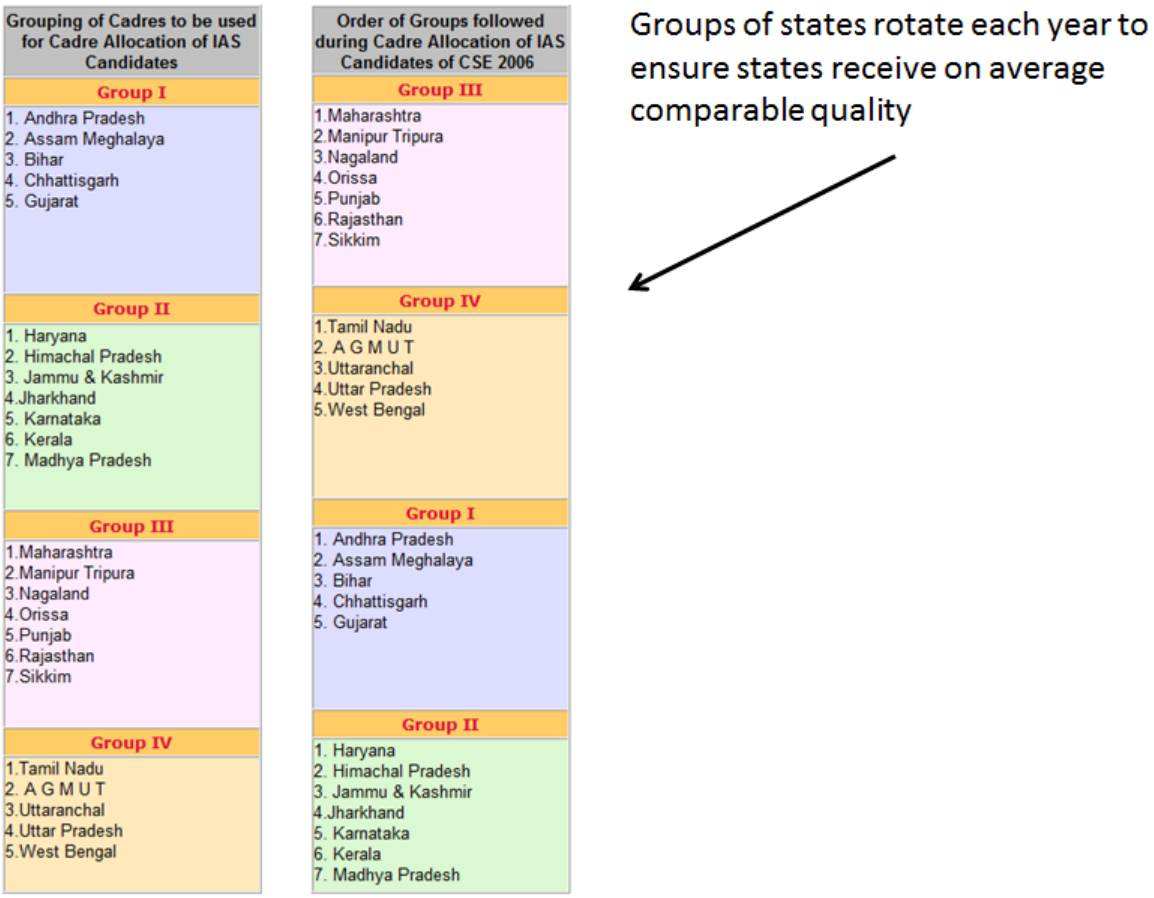
Figure A3: Merit-based (UPSC rank) allocation based on caste and home preference match

Master Statement in respect of candidates allotted to
Indian Administrative Service on the basis of
Civil Services (Main) Examination, 2006 for purpose of their Cadre Allocation

Sl. No.	Rank	Name of the Candidate	Home State	Category	Whether Home State Opted?
1	1		Andhra Pradesh	O.B.C*	Yes
2	2		Punjab	General	Yes
3	3		Uttar Pradesh	General	Yes
4	4		Kerala	General	Yes
5	5		Uttar Pradesh	General	Yes
6	6		Kerala	General	No
7	8		Chhatisgarh	General	No
8	9		Orissa	General	Yes
9	10		Chandigarh	General	Yes
10	11		Orissa	S.C.	Yes
11	12		Uttaranchal	General	Yes
12	13		Kerala	General	Yes
13	14		Uttar Pradesh	General	Yes
14	15		West Bengal	General	Yes
15	16		Uttar Pradesh	General	Yes
16	17		Kerala	General	Yes
17	18		Madhya Pradesh	General	Yes
18	19		Uttar Pradesh	S.C.*	Yes
19	20		Kerala	O.B.C*	Yes
20	21		Rajasthan	General	Yes
21	22		Haryana	General	Yes
22	23		Uttar Pradesh	General	Yes
23	24		Uttar Pradesh	General	Yes
24	25		Uttar Pradesh	General	Yes
25	26		Uttar Pradesh	O.B.C	Yes

Notes: Illustrating the ranking of candidates using the intake year of 2006. The names have been removed in this figure but the full list is publicly available through the Union Public Service Commission. The successful applicants in a given year of intake are ranked in descending order based on the UPSC entry exam score. Home state denotes the state from which the candidate applied from. Category denotes the caste of the candidate, where O.B.C. denotes other backward castes, S.C. scheduled castes, S.T. scheduled tribes and General the unreserved castes. Whether home state opted denotes if the applicant indicated a preference to be allocated to the home state.

Figure A4: Rotation of state groups over years



Notes: Division of state cadres into four groups and the rotation of groups in the order of IAS officer allocation over time, as illustrated by the group order in 2006. The groups of states rotate each year. In 2007, for example, the order changes to Group II, Group III, Group IV, Group I.

Table B1: Testing for selective sorting

	(1)	(2)	(3)	(4)
	Number of recruited officers			Top 10
Mean of dep. var	2.005	2.005	2.005	0.128
Total number of vacancies	-0.049	0.044		
	(0.072)	(0.046)		
Vacancies reserved for home officers			-0.025	-0.001
			(0.091)	(0.023)
Vacancies reserved for out-of-state officers			0.089	0.013
			(0.105)	(0.014)
Intake year FEs	Y	Y	Y	Y
Home state FEs	Y			
Caste FEs	Y			
Home state × Caste FEs	-	Y	Y	Y
Observations	873	873	873	873

Notes: Unit of observation is the home state × caste bracket × intake year. Relating the number of recruited officer and their rank by selection bracket. In columns 1-3, the dependent variable is the total number of recruited officer from a given home state × caste × intake year bracket. In column 4, the dependent variable is the number of recruited officers from a given selection bracket who rank within the top 10. The sample covers all IAS entrants between 2005-2016. Total number of vacancies denotes the total number of slots approved in a given intake year for a state and reserved for a caste bracket (General, OBC, SC/ST). Caste FEs are dummies for OBC, SC, ST. Standard errors clustered at the intake year level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table B2: State-level correlates of the share of single bracket entrants

	(1)	(2)	(3)	(4)
	Share of only candidates 1975-2005			
Mean of dep. var	0.214	0.214	0.214	0.214
log(State level population)	-0.159			-0.188
	(0.137)			(0.136)
TI corruption index		-0.034		-0.089
		(0.042)		(0.081)
Human Development Index			-0.380	-1.204
			(0.591)	(1.047)
Observations	14	14	14	14

Notes: Unit of observation is the state. Sample comprises the 14 main states of India for which we have collected performance scores. Relating the overall share of single bracket entrants (only candidates) to state-level characteristics. Population count is from the 2011 Census, the TI corruption index is the state-level Transparency International corruption index from 2005 as used by (Fisman et al., 2014), and the Human Development Index is from 2007. Robust standard errors. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table B3: Performance index and observed proxies of (non)-performance

	(1)	(2)	(3)	(4)	(5)
	Performance index (standardized)				
	0.000	0.000	0.000	0.000	0.000
Only candidate	-0.117***		-0.111***		-0.087*
	(0.045)		(0.039)		(0.051)
Suspended		-0.555***	-0.606***		
		(0.193)	(0.226)		
Only candidate × Suspended			0.272		
			(0.263)		
Entry exam score				0.032**	0.027**
				(0.013)	(0.013)
Only candidate × Entry exam score					0.053
					(0.039)
Home state × Caste FEs	Y	Y	Y	Y	Y
Intake year × State FEs	Y	Y	Y	Y	Y
Observations	14,027	14,027	14,027	14,027	14,027

Notes: Unit of observation is the score for a given officer in 2012-13 with at least 8 years of tenure. Relating the performance index to the instrument for being a home state allocation, suspensions and entry exam scores. *Only candidate* is a dummy that is 1 if the officer is the only candidate in the home state × caste × intake year bracket. *Suspended* is a dummy that is 1 if the officer is suspended in 2012-13. *Entry exam score* is the standardized entry exam score (centered around sample mean). Standard errors clustered at the home state × caste × intake year and officer-level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table B4: Home state allocation and only candidate - First stage

	(1)	(2)	(3)	(4)	(5)	(6)
	Allocated to home state					
Mean of dep. var	0.363	0.365	0.359	0.359	0.362	0.360
Only candidate	0.355***	0.380***	0.357***	0.351***	0.352***	0.378***
	(0.052)	(0.049)	(0.052)	(0.052)	(0.052)	(0.050)
Sample	Effective	Probity	Pressure	Pro-poor	Overall	Perf.
Home state × Caste FEs	Y	Y	Y	Y	Y	Y
Intake year × State FEs	Y	Y	Y	Y	Y	Y
Individual controls	Y	Y	Y	Y	Y	Y
Observations	17,747	15,145	16,721	17,041	17,692	14,027

Notes: Unit of observation is the score for a given officer in 2012-13 with at least 8 years of tenure. Reporting the first stage regression that relates five measures of performance (ability to withstand illegitimate political pressure, probity, effectiveness, pro-poor orientedness and overall rating) to home state allocation (Table 5). The dependent variable *Home state* is a dummy that is 1 if the officer is allocated to his or her state of origin. *Only candidate* is a dummy that is 1 if the IAS officer is the only candidate in the home state × caste × intake year bracket. Individual controls are: entry exam score and rank, age at entry, female dummy, a dummy for coming from an urban background, having received an academic distinction, a STEM or Economics degree, dummies for previous job type. Standard errors clustered at the home state × caste × intake year and officer-level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table B5: Performance ratings and home state allocation - Job FEs

	(1)	(2)	(3)	(4)
	Performance index (standardized)			
	0.000	0.000	0.000	0.000
Only candidate	-0.117***	-0.101**	-0.124***	-0.130**
	(0.044)	(0.042)	(0.039)	(0.052)
Home state × Caste FEs	Y	Y	Y	Y
Intake year × State FEs	Y	Y	Y	Y
Individual controls	Y	Y	Y	Y
Department FEs		Y		
Job title FEs			Y	
Department FEs × Job title FEs				Y
Observations	14,027	14,027	14,023	14,015

Notes: Unit of observation is the score for a given officer in 2012-13 with at least 8 years of tenure. Relating performance index to instrument for home state allocation. *Only candidate* is a dummy that is 1 if the officer is the only candidate in the home state × caste × intake year bracket. Department FEs are fixed effects for the department (e.g. Land Revenue, Finance, Rural Development). Job title FEs are fixed effects for each job title (e.g. Secretary, Additional Secretary, Director). Respondent fixed effects are dummies for each respondent scoring officers. Source of information FEs are dummies for whether officer is personally known, known through friends and social networks, or known through media. Individual controls are: entry exam score and rank, age at entry, female dummy, a dummy for coming from an urban background, having received an academic distinction, a STEM or Economics degree, dummies for previous job type. Standard errors clustered at the home state × caste × intake year and officer-level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table B6: Visibility of officers and source of information

	(1)	(2)	(3)	(4)
	Known	Known personally		
Mean of dep. var	0.206	0.110	0.151	0.0895
Only candidate	0.005	-0.005	-0.014	-0.001
	(0.012)	(0.007)	(0.010)	(0.008)
Stakeholder	Full		Insider	Outsider
Home state × Caste FEs	Y	Y	Y	Y
Intake year × State FEs	Y	Y	Y	Y
Individual controls	Y	Y	Y	Y
Observations	89,723	89,723	29,617	60,106

Notes: Unit of observation is the respondent-officer pair for IAS officers in 2012-13 with at least 8 years of tenure. Relating whether officers are known by the respondent to the instrument for home state allocation. In Column 1, the dependent variable is a dummy that is 1 if the officer is known at all by the respondent. In columns 2-4, the dependent variables is whether the officer is known through personal interaction. The instrument *only candidate* is a dummy that is 1 if the officer is the only candidate in the home state × caste × intake year bracket. Columns 3-4 break down the sample by whether the respondent is an insider (IAS officer, state civil servant) or outsider (representative from NGO, large firms, media, or an MLA). Caste FEs are dummies for OBC, SC, ST. Individual controls are: entry exam score and rank, age at entry, female dummy, a dummy for coming from an urban background, having received an academic distinction, a STEM or Economics degree, dummies for previous job type. Standard errors clustered at the home state × caste × intake year and officer-level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table B7: Performance and home state allocation - Individual-level

	(1)	(2)	(3)	(4)	(5)	(6)
	Performance index (standardized)					
Mean of dep. var	0.000	0.000	0.000	0.000	0.000	0.000
Home state	0.021	0.006				-0.556**
	(0.052)	(0.056)				(0.268)
Only candidate			-0.211**	-0.210**	-0.190**	
			(0.093)	(0.092)	(0.094)	
Kleibergen-Paap F-stat						43.409
Estimation	OLS		Reduced form			IV
Caste × Home state FEs	Y	Y	Y	Y	Y	Y
Intake year × State FEs	Y	Y	Y	Y	Y	Y
Individual controls		Y		Y	Y	Y
Leads and lags (2)					Y	
Observations	1,381	1,381	1,381	1,381	1,335	1,381

Notes: Unit of observation is the officer in 2012-13 with at least 8 years of tenure. Relating the average performance score of an officer to home state allocation and its instrument. The average performance score is computed by averaging across all performance ratings received by an officer and standardizing the result measure to have a mean of 0 and SD of 1. *Home state* is a dummy that is 1 if the officer is allocated to his or her state of origin. *Only candidate* is a dummy that is 1 if the officer is the only candidate in the home state × caste × intake year bracket. Individual controls are: entry exam score and rank, age at entry, female dummy, a dummy for coming from an urban background, having received an academic distinction, a STEM or Economics degree, dummies for previous job type. The regression is weighted by the number of assessments by officer. Standard errors clustered at the home state × caste × intake year and officer-level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table B8: Performance and home state allocation by state-level corruption

	(1)	(2)	(3)	(4)	(5)	(6)
	Effective	Probity	Pressure	Pro-poor	Overall	Perf.
Mean of dep. var	3.703	3.659	3.496	3.506	3.617	0.000
Only candidate	-0.096**	-0.121**	-0.162***	-0.096*	-0.104*	-0.106**
	(0.044)	(0.053)	(0.049)	(0.051)	(0.060)	(0.044)
× TI corruption index	-0.198***	-0.185***	-0.137***	-0.019	-0.210***	-0.133***
	(0.056)	(0.061)	(0.049)	(0.053)	(0.059)	(0.047)
× HDI	0.002	-0.018	-0.023	0.103*	-0.017	0.020
	(0.047)	(0.056)	(0.046)	(0.053)	(0.050)	(0.043)
Home state × Caste FEs	Y	Y	Y	Y	Y	Y
Intake year × State FEs	Y	Y	Y	Y	Y	Y
Individual controls	Y	Y	Y	Y	Y	Y
Observations	16,678	14,100	15,652	15,972	16,623	12,982

Notes: Unit of observation is the score for a given officer in 2012-13 with at least 8 years of tenure. Relating five measures of performance (ability to withstand illegitimate political pressure, probity, effectiveness, pro-poor orientedness and overall rating) to home state allocation. The instrument *only candidate* is a dummy that is 1 if the officer is the only candidate in the home state × caste × intake year bracket. TI corruption index is the state-level Transparency International corruption index from 2005 as used by Fisman et al. (2014). The *HDI* is the state-level Human Development Index in 2007. Caste FEs are dummies for OBC, SC, ST. Individual controls are: entry exam score and rank, age at entry, female dummy, a dummy for coming from an urban background, having received an academic distinction, a STEM or Economics degree, dummies for previous job type. Standard errors clustered at the home state × caste × intake year and officer-level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table B9: Performance by years of service and state-level corruption

	(1)	(2)	(3)	(4)	(5)	(6)
	Perf. index		Suspended		Centre	
Mean of dep. var	0.166	-0.205	0.641	0.846	0.240	0.221
Only candidate						
× 0-3 years			0.353	-0.134	0.096***	0.071***
	n/a		(0.249)	(0.236)	(0.017)	(0.021)
× 4-8 years			0.240	-0.469*	0.093***	0.059**
			(0.263)	(0.281)	(0.017)	(0.025)
× 9-12 years	-0.569***	0.178	-0.032	-0.465	0.009	0.008
	(0.120)	(0.157)	(0.281)	(0.413)	(0.025)	(0.029)
× 13-15 years	-0.167	-0.014	0.240	-0.724**	-0.057	0.048
	(0.111)	(0.108)	(0.462)	(0.361)	(0.038)	(0.049)
× 16-24 years	-0.085	0.063	0.395	-0.995**	-0.016	0.045
	(0.067)	(0.074)	(0.630)	(0.473)	(0.035)	(0.049)
× ≥ 25-29 years	-0.290**	0.062	1.720	-0.609	-0.105**	0.092
	(0.112)	(0.105)	(1.168)	(0.745)	(0.052)	(0.096)
× ≥ 30 years	-0.536***	0.143**				
	(0.141)	(0.072)				
Intake year × State FEs	Y	Y	Y	Y	Y	Y
Home state × Caste FEs	Y	Y	Y	Y	Y	Y
Individual controls	Y	Y	Y	Y	Y	Y
Year FEs			Y	Y	Y	Y
Sample	Cross-section		Officer-year panel			
Corruption level	High	Low	High	Low	High	Low
Observations	7,764	6,263	34,781	21,737	34,781	21,737

Notes: Relating outcomes to instrument for home state allocation, broken down by years of service and state-level corruption (above/below mean Transparency International corruption index). Years of service are binned corresponding to the payscales of the IAS. In columns 1-2, the dependent variable is the cross-sectional average performance index (averaged across all five standardized dimensions). In columns 3-4, suspended is a dummy that is 1 if the officer is suspended (scaled × 100). In columns 5-6, Centre is a dummy that is 1 if the officer is serving in the Central Government. The instrument *only candidate* is a dummy that is 1 if the officer is the only candidate in the home state × caste × intake year bracket. Standard errors clustered at the individual and home state × caste × intake year. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table B10: Asset declarations and home state allocation

	(1)	(2)	(3)	(4)	(5)
	Log(Declared asset value 2012)				
Mean of dep. var	3.824	3.824	3.820	3.820	3.930
Only candidate	0.423*	0.472*	0.486*	0.487*	0.613*
	(0.252)	(0.264)	(0.271)	(0.272)	(0.314)
× TI corruption index			-0.010	0.049	0.366
			(0.193)	(0.232)	(0.247)
× HDI				0.101	0.417
				(0.237)	(0.284)
Home state × Caste FEs	Y	Y	Y	Y	Y
Intake year FEs	Y	Y	Y	Y	Y
State × Tenure FEs	Y	Y	Y	Y	Y
Individual controls	Y	Y	Y	Y	Y
Sample	Full sample				Senior
Observations	577	577	539	539	436

Notes: Unit of observation is the officer. Relating the declared value of immovable properties (land and properties) to home state status. Sample comprises all officers that could be matched to the immovable properties return sheets in 2012 (the year of the performance survey). The dependent variable is the (log) total asset values declared in 2012. The instrument *only candidate* is a dummy that is 1 if the officer is the only candidate in the home state × caste × intake year bracket. TI corruption index is the state-level Transparency International corruption index from 2005 as used by Fisman et al. (2014). The *HDI* is the state-level Human Development Index in 2007. Estimates are relative to assessments provided by officers. Caste FEs are dummies for OBC, SC, ST. Individual controls are: entry exam score and rank, age at entry, female dummy, a dummy for coming from an urban background, having received an academic distinction, a STEM or Economics degree, dummies for previous job type. Standard errors clustered at the home state × caste × intake year and officer-level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table B11: Empanelment and home state allocation

	(1)	(2)	(3)	(4)
	Ever Empaneled		Empaneled	
Mean of dep. var	0.638	0.638	0.009	0.009
Only candidate	-0.209*	-0.187	-0.011*	-0.012*
	(0.123)	(0.127)	(0.007)	(0.007)
Intake year FEs	Y	Y	Y	Y
Home state × Caste FEs	Y	Y	Y	Y
Individual controls		Y		Y
Year FEs			Y	Y
Sample	Iyer & Mani 2012		Panel	
Observations	642	642	32,505	32,505

Notes: Relating empanelment (i.e. nomination to serve at the central government) to home state status. Unit of observation in columns 1-2 is the officer. The data on the empanelment outcome is derived from Iyer and Mani (2012), and *Ever empaneled* is a dummy that is 1 if the officer was ever empaneled in 2008. The cross-sectional sample covers the cohorts 1979-1987 – these are the cohorts that qualify for joint secretary-level empanelments (requiring 20 year's of service). In columns 3-4, the unit of observation is the officer-year. The data on the empanelment outcome is derived from online records on "Orders related to empanelments" (http://dopt.gov.in/orders-related-empanelments-0, accessed July 2019). The dependent variable is 1 if the officer is empaneled in a given year. The panel covers the cohorts 1978-1990 who qualify for joint secretary-level empanelments (requiring 20 year's of service). Home state is a dummy that is 1 if the officer is allocated to his or her state of origin. The instrument is the total number of candidates in a given home state × caste × intake year bracket. Caste FEs are dummies for OBC, SC, ST. Individual controls are: entry exam score and rank, age at entry, female dummy, a dummy for coming from an urban background, having received an academic distinction, a STEM or Economics degree, dummies for previous job type. Standard errors clustered at the home state × caste × intake year and officer-level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

A.1 Converting unmatched insider allocations

In presence of open unreserved insider vacancies, the unreserved insider vacancy can be allocated to insider IAS officers from SC/ST and OBC (following the exact order) if there is an SC/ST (or OBC) outsider vacancy to allow for the exchange: For example, if Gujarat has received two unreserved insider vacancies but only one Gujarati general caste to fill the first slot, the second slot is opened to Gujarati SC/ST insiders, and if those are not available, to OBC insiders. The reallocation, however, is only permitted when there is a corresponding outsider vacancy that can be converted to an unreserved outsider vacancy to maintain the quota among the caste vacancies. A Gujarati insider SC/ST then can only fill the unreserved insider vacancy if a SC/ST outsider vacancy is available for exchange. Similar rules apply for unfilled SC/ST or OBC insider vacancies. Open SC/ST insider vacancies that could not be filled are first relaxed to allow for OBC insider candidates and then to general candidates. Open OBC vacancies, similarly, can first be filled by SC/ST insider candidates and then by general candidates (in both cases provided there is a corresponding outsider slot for exchange). Any remaining open insider vacancies that could not be filled despite the relaxation of the quotas are converted to outsider vacancies to ensure all vacancies are filled.

A.2 Outsider allocation

The allocation of the outsiders and those who failed to be allocated to their preferred home state (and are consequently converted to outsiders) is done according to a rotating roster system. The roster is created by arranging all 24 cadres in alphabetical order and dividing them into four groups. These groups are devised on the basis of an average intake by each group, which over a period of time is roughly equal:

1. Group I: Andhra Pradesh, Assam-Meghalaya, Bihar, Chhattisgarh and Gu-

jarat

2. Group II: Haryana, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Kerala and Madhya Pradesh
3. Group III: Maharashtra, Manipur-Tripura, Nagaland, Orissa, Punjab, Rajasthan and Sikkim
4. Group IV: Tamil Nadu, AGMUT (UT Cadre), Uttarakhand, Uttar Pradesh and West Bengal

The outsider candidates are allocated in the order of merit across the four groups for the outsider available vacancies (including those that have been converted from insider vacancies). In the first cycle, all candidates are allocated to their matching caste vacancy in the four states of Group I, starting with Andhra Pradesh. In the second cycle, the remaining candidates are allocated to their matching caste vacancies in Group II and so on. Since states who receive officers earlier in the allocation process will receive higher ranked recruits, the order of the groups shuffles each year to ensure that all states receive officers of comparable quality. In Appendix Figure A4, for example, Group III is the first group in 2006, followed by Group IV, Group I and Group II. In the subsequent year, the groups will rotate and the allocation of outsiders will commence with Group II first, followed by Group III, Group IV and Group I.