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Can Mandated Political Representation Increase Policy Influence for Disadvantaged Minorities? Theory and Evidence from India

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Abstract

A basic premise of representative democracy is that every person subject to policy should have a voice in its making. However, policies enacted by electorally accountable governments often fail to reflect the interests of disadvantaged minorities. This paper uses political reservation in India to examine the role of mandated political representation in providing such groups policy influence. The Indian constitution mandates political reservation for disadvantaged castes and tribes in state elections – only members of these groups can stand for election in reserved jurisdictions. I find that political reservation in Indian states has increased targeted transfers to groups which benefit from the mandate. This finding underlines the importance of political representation in providing disadvantaged minorities political voice. It also suggests that complete policy commitment may be absent in democracies, as is found in this case.

1   Introduction

There are strong moral and economic arguments suggesting that it is in the interest of society to improve the economic standing of historically disadvantaged minority groups.[1] These arguments are particularly compelling in the case of India, where the hierarchical caste system has contributed to the economic deprivation of those born into low ranked castes.[2] At Independence, the Indian State committed to use public policy to end caste-based discrimination, and to improve the economic status of disadvantaged groups. Arguably, the centerpiece of this endeavor has been the use of mandated political representation in favor of these groups.

This paper examines the impact of mandated political representation on state-level policy outcomes in India. Prior to every state election, a specified number of jurisdictions are (separately) declared reserved for disadvantaged castes and tribes. Only members of the group which benefit from reservation can stand for election. However, the entire electorate votes over the set of candidates. The effect of the mandate is to alter legislator identity without affecting voter identity.

In most democracies, minority groups tend not to get selected as candidates by parties, and therefore are under represented in the legislature [Rule and Zimmerman 1994]. While many countries have experimented with mandates which seek to increase minority representation in the political process, the Indian experiment remains, by far, the most radical [Grofman and Lijphart 1986]. The placing of requirements on candidate identity in reserved jurisdictions directly increases the political representation afforded to minority groups in the legislature. It is also amongst the largest experiments of its kind – a quarter of all legislators in India, at both the national and state level, come from reserved jurisdictions.

All experiments in mandated political representation are predicated on the assumption that legislative capture by non-minority groups adversely affects the policy interests of minority groups, and that parties cannot fully control candidate behavior after elections. However, this assumption is invalid if parties and voters can ensure that candidate behavior

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[1]Historically disadvantaged groups are commonly defined as groups which have been systematically excluded from institutions and cultural practices that provide skills and resources. An important moral argument for directing public policy at such groups is that historical discrimination against a group should not be allowed to inhibit its members present day well-being. Moreover, such policies may enhance efficiency by improving the talent allocation across different occupations [Holzer and Neumark 2000].

[2]For instance, Manu Smriti, the definitive treatise on caste system, decrees that the dwelling of low castes be outside the village, and their wealth be dogs and donkeys. It states that an upper caste may take possession of the property of a low caste with perfect peace of mind (Manu Smriti VIII:417, X:52).

after elections is guided by the commitments they made beforehand – a standard assumption in many political economy models [Downs 1957]. An analysis of the policy impact of political reservation provides a direct empirical test of this assumption.

The first part of the paper discusses the features of the political process which affect the impact of political reservation on policy outcomes. I show that the effectiveness of political reservation in altering policy outcomes depends on the nature of the contract between the electorate and the elected, of which two important elements are candidates' ability to commit to policies and the structure of legislative bargaining. Changes in legislator identity induced by political reservation can only affect policy in the absence of full policy commitment. Moreover, such changes may not be significant unless every legislator has voice in the policymaking process.

The remainder of the paper provides empirical evidence on the policy impact of political reservation in India. I use a state-level panel data set to examine whether political reservation for scheduled castes and scheduled tribes in state elections has affected policy-making. A state-level analysis is appropriate as India is a federal democracy, with states enjoying substantial independent policy-making powers. Moreover, the choice of affirmative action policies in favor of scheduled castes and scheduled tribes has been an important element of policy activism in these states [Parikh 1997].

The Indian constitution mandates that the extent of state-level political reservation enjoyed by a group reflects the group's population share in the state. Moreover, the extent of political reservation can be revised only when new census population estimates are received. Hence, while a group's population share varies annually, the proportion of jurisdictions reserved for it change with a lag – that is, only at the point of election, and after fresh census population estimates for the group are received.

These institutional features of political reservation allow me to make empirical headway in isolating the policy impact of changes in legislator identity. I use state-specific over time changes in the extent of political reservation to identify the impact of changes in the group shares of minority legislators on policy outcomes. The timing of such changes are determined by institutional features of the mandate. Moreover, the time-lag in the responsiveness of the political reservation series to population changes implies that I can separately control for the two groups population shares in the regression. This allows me to disentangle the policy effects of changes in the political representation afforded to a group from those due to changes in its population share. The lag in the responsiveness of political reservation to population changes forms the centerpiece of my identification strategy, and the empirical

analysis provides evidence on the validity of the assumptions underlying this strategy.

The main finding is that political reservation in Indian states has increased targeted transfers to the groups which benefit from political reservation. Such increases have not been accompanied by increases in overall spending, but instead appear to have come at the expense of general redistribution programs such as education spending. These findings point to the centrality of political representation in providing a group policy influence. Moreover, in conjunction with my theoretical findings, they suggest that complete policy commitment may be absent in democracies, as is found in this case.

The remainder of the paper is organized as follows. Section 2 discusses the features of the political process which affect the policy impact of political reservation, and Section 3 the institution of political reservation, as practiced in India. Section 4 presents the empirical findings, and Section 5 concludes.

2   Political reservation and the political process

Understanding the link, if any, between a candidate's group identity and policy outcomes is central to the correct modelling of political party and voter behavior. Early political economy models assumed that parties can commit their candidates to policies prior to elections, i.e. full policy commitment is feasible. In this case electorally minded parties will commit to the policy favored by a majority of voters [Downs 1957]. A more recent political economy literature has argued that existing political institutions cannot enforce full policy commitment (Osborne and Slivinski [1996], Besley and Coate [1997]). In situations of incomplete policy commitment, candidates' policy preferences, which are usually correlated with their group identity, affect their electoral appeal.[3] Such models of policy-making predict that increases in political representation afforded to a group will enhance its policy influence.

Recent empirical papers in political economy also reject the main predictions of full policy commitment models. Candidates (parties) do not exhibit policy convergence, and their policy choices differ systematically from the median voter's preferences. Kalt and Zupan [1985] and Levitt [1996] show that a candidate's personal 'ideology' is a key determinant of observed policy outcomes. There is, however, limited evidence on how a country's choice of political institutions affect the relationship between candidate identity and policy outcomes. The goal of this paper is to address this question in the context of a specific institution –

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[3]Husted and Kenny [1997] and Edlund and Pande [2002] provide empirical evidence that an individual's group identity is correlated with their policy preferences.

political reservation.

In this Section I use a stylized model of democratic policy-making to demonstrate how alternative assumptions about the political process affect the relationship between legislator identity and policy outcomes, and therefore the policy impact of a mandate of political reservation.

Consider a large population of N individuals who differ in their earning potential. An individual supplies one unit of labor, and depending on his/her earning potential either earns y^r (rich) or earns y^p (poor), where $y^r > y^p$. In addition, individuals differ with respect to an unalterable attribute, which I call caste – an individual is born either a high (H) or a low (L) caste. Let λ_c^k denote the population share of individuals who belong to caste $c \in (H, L)$ and earn income y^k, where $k \in (r, p)$. I assume low caste citizens are a population minority i.e. $\lambda_L < 1/2$, and are more likely to be poor i.e. $\frac{\lambda_L^p}{\lambda_L^r} > \frac{\lambda_H^p}{\lambda_H^r}$.

Individual utility increases with own income. Individual income, if taxed, is taxed at rate t and is redistributed via an anonymous general transfer T and/or via a targeted transfer δ, where $\delta = 0$ for high caste individuals. The former redistributes from rich to poor individuals, and the latter from high to low caste individuals. Redistribution is budget balancing. Conditional on desiring redistribution, an individual will favor full redistribution (i.e. $t = 1$). Table I describes, by income and caste, an individual's preferred redistributive policy. Note that the redistributive preferences of a rich low caste citizen varies with the demographic make-up of the population – if poor low castes' population share exceeds λ^* she favors no redistribution to targeted redistribution. The reason is that the per head targeted transfer she receives is less than her income lost as tax levied to finance the transfer.

TABLE I

Preferred redistributive policy, by caste and income

Group	Preferred redistributive policy
Rich high caste	No redistribution
Poor high caste	General redistribution
Rich low caste	Targeted redistribution if $\lambda_L^p < \lambda^*$ where $\lambda^* \equiv \frac{\lambda_H^p y^p + \lambda_H^r y^r}{y^r - y^p}$, else no redistribution
Poor low caste	Targeted redistribution

Elected legislators choose the levels of general and targeted redistribution. The extent of policy influence enjoyed by a group of legislators is proportional to, and increasing in, its

group size.[4]

For expositional clarity I assume the population is divided into Z jurisdictions, with one legislator elected per jurisdiction.[5] Elections in a jurisdiction are characterized by two party competition, and the candidate with the highest vote share is elected. Parties are ideologically differentiated on the income dimension – one party only has rich members (now on, party R), and the other only poor members (now on, party P). I assume parties field members as candidates. Hence, the choice variable for a party is the proportion of jurisdictions in which it fields low caste candidates. Parties seek to maximize their average member's income, and citizens their own income. Identical jurisdictions imply the same electoral outcomes occurs in every jurisdiction.

I assume that in every jurisdiction a fraction α of the voters are rational, and the remaining (1-α) are noise voters. With two party competition sincere voting is rational.[6] Rational voters know whether or not parties can commit to policies, and vote accordingly.[7] Noise voters' decisions are uncorrelated with candidate identity, and by making election outcomes probabilistic they ensure that a voting equilibrium exists. The Mathematical Appendix describes the mapping from individuals voting decisions to electoral outcomes for this economy.

In this environment a political equilibrium is a pair of party entry decisions that are best responses. A party's entry decision is the proportion of jurisdictions in which it fields low caste candidates.

RESULT 1 *If the proportion of low caste citizens in each party is less than their population share, then there exists an equilibrium in which no low caste citizens are fielded as candidates and no targeted redistribution occurs.*

The proof is provided in the Mathematical Appendix. In this model a party maximizes its average member's payoff. As long as the party share of low castes is less than their population share, targeted redistribution lowers this payoff. Moreover, in this model fielding

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[4]Weingast [1979], among others, provides the micro-foundations for such a universalistic legislative bargaining procedure. The Mathematical Appendix defines the precise legislative decision-making rule assumed.

[5]Qualitatively identical results can be derived for the single district case with proportional representation. In such an environment political reservation would take the form of a mandate which requires that party lists include low caste candidates, and that those candidates form a strict proportion of legislators.

[6]If a voter can affect the electoral outcome then she will wish to move policy towards her preferred outcome. Since a voter can only affect the electoral outcome in the jurisdiction that she votes, this implies voting for her preferred candidate.

[7]With full policy commitment a rational voter will condition her vote directly on the policy associated with a candidate, while in its absence she will condition her vote on both the candidate's party and group identity.

low caste citizens either leaves party policies unaffected, or increases targeted redistribution. In the former case, candidate identity is irrelevant to the political process and there will exist an equilibrium in which no low caste candidates are fielded. In the latter case, any electoral gains associated with fielding a positive number of low caste candidates are negated by the loss in the utility of the party's average member (for the proof, see Mathematical Appendix). Hence, there exists an equilibrium in which only high caste candidates are fielded.

The existence of such an equilibrium relies on the assumption that low castes party membership share is less than their population share. This assumption is in line with stylized facts on minority political participation for most democracies, including India. Disadvantaged minorities tend to be under-represented in all stages of democratic policy-making. These include party membership, entry as candidates, and representation in legislature. Rule and Zimmerman [1994] provide cross-country evidence on this issue, and Chhibber [1999] evidence for India.

My interest is in how the introduction of a mandate of political reservation alters the policies associated with such an equilibrium. A mandate of political reservation requires parties to field low caste candidates in a specified set of jurisdictions. It, thereby, ensures that a certain proportion of legislators are low caste, while leaving the demographic composition of the electorate unaffected. I assume the extent of political reservation for low castes equals their population share.

RESULT 2 *A mandate of political reservation can affect policy outcomes only if full policy commitment is absent.*

Political reservation increases the group share of low caste legislators. However, with full policy commitment a legislator's group identity is irrelevant to the political process. Irrespective of candidate identity, a party will commit its candidates to policies which maximize the party's expected payoff. The choice of these policies depends on the party's objective function, and the relationship between a party's policy choice and its likelihood of winning. These, in turn, depend on the demographic composition of the party's member pool and the voter population respectively. Neither of these are altered by political reservation. Rational voters will condition their vote solely on the policies associated with candidates. Hence, neither the electoral fortunes of the parties nor their choice of policies are affected by the introduction of political reservation.

RESULT 3 *In the absence of full policy commitment a mandate of political reservation will increase targeted redistribution if either the population share of poor low caste citizens (λ_L^p) is less than λ^*, or if it increases the number of poor low caste legislators.*

If parties cannot commit to policies, then a legislator's group identity is informative of the policies she will pursue in the legislature. Moreover, the policy influence enjoyed by a group of legislators is increasing in its group size. If $\lambda_L^p < \lambda^*$, then all low caste citizens favor targeted redistribution. Political reservation directly increases the group share of low caste legislators, and therefore the extent of targeted redistribution.

If, instead, $\lambda_L^p > \lambda^*$ then only poor low caste citizens favor targeted redistribution. In this case the policy impact of political reservation is sensitive to the extent of political reservation. To see this note that, irrespective of the extent of political reservation, party R never favors redistribution. The reason is that all rich individuals oppose redistribution. In contrast, the targeted redistribution associated with party P is increasing in the extent of political reservation (since poor low castes favor redistribution). Consequently, if the extent of political reservation, and therefore the targeted redistribution associated with election of party P is too high, poor high caste citizens will switch their vote to party R.[8] Thus we can have a situation where in the absence of political reservation party P was electorally successful, but political reservation reverses its electoral fortunes.[9] Here, political reservation increases targeted redistribution if and only if it increases the number of poor low caste legislators.

Finally, the policy impact of political reservation is sensitive to the assumed form of legislative bargaining. If the legislative bargaining procedure instead follows majoritarian rules, i.e. the preferences of the majority group of legislators prevail, then high caste legislators will successfully prevent targeted redistribution.

In sum, this model affords predictions on the conditions under which political reservation will affect policies, and which policies are likely to be affected. I will bring these predictions of the model to the data, as they give a mapping from features of the political process to the policy impact of political reservation. The model suggests that a statistically significant link between changes in political reservation in an Indian state and targeted transfers to the groups benefitting from political reservation reflects the policy relevance of political representation for a group. Moreover, it implies policy commitment in the Indian electoral system is imperfect, and that legislative bargaining provides minority legislators policy influence.[10]

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[8]This occurs whenever the proportion of jurisdictions reserved $(\pi\ )> \frac{\lambda^r(y^r - y^p)}{\lambda^p y^p + \lambda^r y^r}$

[9]Cameron, Epstein, and O'Halloran [1996] argue that an important reason why gerrymandering in the United States had a limited effect on the policy influence of African Americans was that it had perverse electoral implications – in particular, it improved electoral outcomes for the Republican party in many jurisdictions.

[10]The results in this Section suggest an ambiguous relationship between increases in the population share

3   Political reservation: the institutional context

The Indian constitution mandates political reservation in favor of scheduled castes and scheduled tribes in all state and national elections. In addition, it directs state governments to use public policy to improve the economic well-being of these two groups.

The constitution was implemented in 1950, at which point state lists identifying specific castes and tribes as scheduled castes and scheduled tribes were established. The 1931 census criteria and a 1950 tribal identification criteria were used to develop these lists.[11] Table II details the criteria used. These lists have since been revised twice – in 1956 to remove anomalies, and in 1976 to remove intra-state differences in the identification of scheduled castes and scheduled tribes. Such intra-state differences had arisen due to the reorganization of state boundaries.

Scheduled castes make up roughly 16 percent of the Indian population, and scheduled tribes another 8 percent. Relative to the rest of the population, these two groups are socially and economically disadvantaged (see Table III). The incidence of poverty in these groups is roughly one and a half times that in the rest of the population. An important reason for the economic backwardness of scheduled castes is that the caste system traditionally assigned members to menial occupations (such as skinning animal carcasses, removal of human waste and working in cremation grounds), and imposed restrictions on asset ownership.[12]   In the case of scheduled tribes their geographic isolation, combined with their dependence on traditional agricultural practices for subsistence, have contributed to their relative poverty.

Article 332 of the constitution mandates political reservation in favor of both groups in state elections. In a jurisdiction reserved for scheduled castes (scheduled tribes), only a scheduled caste (scheduled tribe) citizen may stand for election. The entire electorate, however, participates in choosing among candidates so qualified. Two criteria are provided for the selection of reserved jurisdictions. First, the population concentration of the group in a jurisdiction. Second, sufficient dispersal of reserved jurisdictions within the state.[13]

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of poor low castes and the policy influence they wield. In particular, increases in their group size to above λ^* may, by making transfers to them more costly for other groups, reduce the likelihood of redistribution.

[11]Roughly 779 low castes and 250 tribes are identified as scheduled castes and scheduled tribes respectively.

[12]Over 85 percent of the Indian population is Hindu. Every Hindu belongs to a caste with caste membership hereditary. The genesis of the caste system is usually traced to the Aryan invasion of India in approximately 1500 B.C. Caste groupings are, in general, endogamous. The caste system is hierarchical, with a caste's rank the primary determinant of its members occupations.

[13]Scheduled castes are a population minority in every jurisdiction, irrespective of its reservation status. Relative to non-reserved jurisdictions the population share of scheduled castes is, on average, 5-6 percentage points higher in reserved jurisdictions. In contrast, scheduled tribes are a population majority in roughly

Section 3 of the article states that the number of jurisdictions reserved for scheduled castes (scheduled tribes) should bear as nearly as possible, the same proportion to the total number of jurisdictions as the scheduled caste (scheduled tribe) population bears to the total population in the state. The only permissible basis for changes in the extent of reservation is changes in the census estimates of the group's population share in the state.

Two independent national-level commissions are responsible for implementation of this mandate: the Election commission which oversees state and national elections, and a three member Delimitation commission which is constituted when fresh census estimates arrive.[14] The orders of these commissions have the force of law, and cannot be questioned in court.

Table IV lists the years in which the proportion of jurisdictions reserved for a group changed, the stated reason for change, and the commission responsible. As states often have elections in different years a single commission's recommendations may be implemented in multiple years. In every case changes in the proportion of jurisdictions reserved for a group reflect changes in the census population estimate for the group, and equal the change in the census population estimate for the group. The changes in a group's population share, in turn, were caused by either the arrival of fresh census population estimates or centrally mandated institutional changes which altered the existing census estimate for the group. These institutional changes included the national shift to single member jurisdictions in 1962, the creation of a new state Haryana in 1965, and the 1976 national mandate which required that a caste (tribe) which was identified as a scheduled caste (tribe) in any part of the state be defined as a scheduled caste (tribe) for the entire state. Such within state differences in the definition of scheduled castes and scheduled tribes had arisen due to the reorganization of state boundaries over time. Finally, a national decision to freeze the total number of jurisdictions in a state constant has prevented revisions in the extent of reservation for a group since 1980.

The extent of political reservation in a state has defined the extent of representation enjoyed by scheduled castes and scheduled tribes in state legislatures – Galanter [1978], and Dushkin [1972] provide evidence on this.[15] Quantitative evidence on how such representation has affected electoral and policy outcomes is, however, lacking, and Indian political

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half the jurisdictions reserved in their favor [Galanter 1984].

[14]Membership to the Delimitation commission is restricted to a retired national court judge, a sitting state court judge and the chief election commissioner.

[15]For instance, in 1967 of the 2723 unreserved state legislature jurisdictions scheduled caste legislators occupied only 4 and scheduled tribe legislators 8. Further evidence is provided in Mendelsohn and Vicziany [1998].

commentators are divided on this issue. Some argue that party control of candidates' policy activism and the structure of legislative bargaining has led to political reservation having little to no policy impact. For instance, Baxi [1995] has argued that scheduled caste and scheduled tribe legislators need to appeal to the upper caste constituents in reserved jurisdictions and the primarily upper caste membership of party plenary committees has prevented them from pursuing their personally preferred policies in the legislature. Others, such as Dushkin [1972], Joshi [1982], and Galanter [1984] claim that minority legislators act *en bloc* and have succeeded in increasing transfers to their own group. These, they argue, have included more cabinet positions for themselves, more scholarships and reservations in higher educational institutions and, above all, more government jobs.[16] Below, I use a state-level data-set to provide evidence on the role of political reservation in affecting policy-making.

4 Empirics

4.1 Data

My data-set covers the 16 major Indian states, and spans the period 1960-1992. These states account for over 95 percent of the Indian population. Table V provides descriptive statistics.

To examine how political reservation has affected state-level policy outcomes I consider two types of policies. First, policies which do not restrict policy benefits to scheduled castes and/or scheduled tribes (henceforth 'general' policies), and second, those which do (henceforth 'targeted' policies).

I consider three general policies. First, total state per capita expenditure. This variable allows for an examination of how changes in the political representation afforded to a group in a state affects the state's overall budget constraint. Second, the share of a state's total expenditure devoted to education. Education spending constitutes roughly 21 percent of the average Indian state's total spending, and is the largest general development expenditure category in most states. Finally, I consider an asset redistribution policy – state-level land reform. The land reform variable considered is a dummy variable which takes a value of one

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[16]Dushkin [1972] quotes instances of such activism during the 1967-72 national parliamentary session. Congress party was defeated on the amendment,'The opinion of the House (that) safeguards provided in the Constitution for the scheduled castes and tribes are not being fully implemented' due to bloc voting by minority legislators. She also attributes liberalization of job reservation policy (July 1968, 1970), increased flexibility in targeted educational subsidies (1969), and a stiffening of the untouchability offences act (1970) to their influence.

in years that a state passes a land reform act, and is zero otherwise.[17]

I then examine three targeted policy variables. The first is the share of a state's annual budget devoted to welfare programs targeted at scheduled castes, and the second is the share devoted to welfare programs for scheduled tribes. These programs include, among others, group housing projects, hostels for students belonging to these groups and provision of public goods in scheduled caste and scheduled tribe hamlets. The average state spends roughly between $3-4$ percent of its budget on such programs. The third policy variable is the proportion of state government jobs reserved for these two groups. Over 20 percent of state government jobs are reserved for these two groups. Arguably, increases in the extent of job reservation has been the most important political concession granted to scheduled castes and scheduled tribes in post-independence India (Mendelsohn and Vicziany [1998], Parikh [1997]).[18]

The main explanatory variables of interest are the group shares of scheduled caste and scheduled tribe legislators. I measure these as the proportions of jurisdictions reserved for scheduled castes and scheduled tribes in a state. I separately control for scheduled caste and scheduled tribe voter effects on policy by the population shares of these two groups. All states in the sample have a scheduled caste population, but three states do not have a scheduled tribe population.

4.2   Empirical strategy

To examine how political reservation in a state affects policy outcome O_{st} I estimate regressions for states s and years t of the form:

$$O_{st} = \alpha_s + \beta_t + \gamma_1 R_{st} + \gamma_2 P_{st} + \gamma_3 T_{st} + \gamma_4 D_{st} + \varepsilon_{st}$$

where α_s and β_t are state and year fixed effects. R_{st} denotes the proportion of jurisdictions reserved for scheduled castes and scheduled tribes respectively, and P_{st} the proportions of scheduled caste and scheduled tribe population in the state. T_{st} is a vector of state-specific characteristics – these include real per capita state income, population density and two measures of the population's age-distribution (proportion population aged 15-34, and proportion population over 35). Changes in the extent of political reservation only occur in

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[17]This variable was created by Besley and Burgess [2000], who provide evidence on the political nature of land reform activism across Indian states.

[18]Job quotas for different population groups was first introduced by the British on the basis of the 1922 Miller report. Parikh [1997] describes the evolution of job reservation policy in India.

the election years. To ensure that the political reservation series does not simply proxy for election year effects I include an electoral dummy variable D_{st}.

The inclusion of state and year dummies implies that changes in political reservation which are common to all states are captured by the year dummies, and so are not a source of variation. In this empirical specification identification of the effect of political reservation on policy outcomes is obtained out of within state time variation, i.e. state specific changes in reservation over time.

Such variation in the extent of reservation is attributable to changes in the state specific population shares of these groups. The nature of the Indian political reservation mandate implies that political reservation responds to changes in population shares only at a point of election, and only after new census estimates have been received (for details, see Table IV). Moreover, cross-state differences in election timing implies that changes in political reservation caused by the arrival of a new census estimate occur in different years for different states. These time-lags in the response of state-level political reservation to population changes allow me to separately control for a group's population share and the extent of reservation it enjoys.

The validity of my identification strategy relies on three assumptions. First, that state specific changes in political reservation are not attributable to the policy-making process in the state. Second, that changes in these groups' population shares, which underlie reservation changes, are not driven by policy-induced migration. Third, that the political reservation variable does not simply proxy for omitted lagged population effects. The validity of the first assumption derives from the institutional features of political reservation as practiced in India – changes in the extent of reservation are always due to Election and Delimitation commission decisions, and are based on the arrival of new census population estimates for a state. Hence the time-lag between population changes and reservation changes for a group is determined by the institutional features of the mandate. Section 4.4 provides regression results from alternative specifications which check the validity of the latter two assumptions.

4.3   Basic results

In Table VI I report the basic results. The first three columns provide regression results for general policy outcomes. Column (1) tells us that increases in the proportion of scheduled caste and scheduled tribe legislators leave total spending unaffected. However, column (2) shows that such increases do affect spending on (at least) one general policy – education. A one percentage point increase in the share of either scheduled caste or scheduled tribe

legislators lowers the share of total spending going to education by slightly less than a 0.4 percentage point. Column (3) shows that this effect does not extend to asset-based redistribution, as measured by land reform. Changes in the share of scheduled caste legislators show a weak positive correlation with land reform, while the share of scheduled tribe legislators is uncorrelated with the extent of land reform. Finally, a F-test for the equality of the policy impact of scheduled caste and scheduled tribe legislators suggests that in the case of general policies the interests of these two groups are aligned – in no case can I reject the null that both groups exert identical policy influence.

The last three columns of Table VI tell us that changes in the extent of political reservation affect policies targeted towards scheduled castes and scheduled tribes. Moreover, there are significant differences in the impact that scheduled caste and scheduled tribe legislators exert on these policies. Increases in scheduled caste legislators' group share has a large and significant positive effect on job quotas (column (4)). A one percentage point rise in the group share of scheduled caste legislators increases job quotas by roughly half a percentage point. However, I find no correlation between increases in the number of scheduled caste legislators and spending on scheduled caste welfare programs (column (5)). In contrast, increases in the group share of scheduled tribe legislators raises spending on tribal welfare programs. There is roughly a one to one correspondence between increases in the share of scheduled tribe legislators and increases in spending on tribal welfare programs (column (6)). On the other hand, increases in their group size leave job quotas unaffected.

The finding that scheduled caste legislators affect job quotas and scheduled tribe legislators affect welfare spending is consistent with differences in their group characteristics. Relative to scheduled tribes, scheduled caste citizens are more educated and geographically more dispersed. Hence, their relative returns from individual-specific policies, such as job quotas, are higher. In contrast, relative to scheduled castes, scheduled tribe citizens enjoy greater benefits from geographically localized welfare programs such as housing schemes.

Turning to voter effects I find increases in the scheduled caste population share leads to increases both in total spending, and the share going to education. In addition, increases in their group share correlate positively with the level of job quotas, and negatively with the extent of redistribution towards scheduled tribes. The opposite is true of scheduled tribes. Specifically, increases in scheduled tribe population are associated with reductions in general and targeted redistribution. To interpret these findings it is relevant to note that while both groups remain socio-economically disadvantaged the political activism of members of these two groups differs. While scheduled castes have emerged as an important political bloc in

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post-Independence India, scheduled tribes remain, by and large, politically marginalized. Hence, it is reasonable to interpret the differences in how these two groups affect policy as reflecting differences in the political voice they enjoy.[19]

Theory predicts that the extent of economic inequality in the state and the political make-up of its legislature are likely to affect the type and extent of redistribution. Moreover, changes in economic and political inequality may affect the policy impact of political reservation.[20] In Table VII I explore the empirical worth of these ideas. I measure economic inequality in a state by the Gini coefficient, and the extent of political power concentration in a state by the political Herfindahl Index. This index is a sum of the squares of the legislator share of different parties in a state's legislature. It takes the value of one when all legislators belong to a single party, and falls in this index reflect increases in political competition. I also examine the policy relevance of either group being a 'swing' group in the legislature. Scheduled caste (scheduled tribe) legislators constitute a swing group when the majority party relies on its scheduled caste(tribe) legislators for its majority status. For expositional ease I restrict the analysis to the subset of policies which are affected by political reservation.[21]

In every case the relationship between political reservation and policy outcomes is robust to the inclusion of these additional variables. There is, however, evidence that the extent of political concentration and economic inequality in a state has independent effects on policy-making.

The first two columns of Table VII consider education spending. Increases in both political concentration and economic inequality reduce education spending (column (1)). I find mixed evidence on the role of a group's swing status – scheduled tribe legislators lower education spending when they constitute a swing group, while scheduled caste legislators raise such education spending (column (2)).

Columns (3) and (4) consider job quotas. Increases in economic inequality lower job quotas, a finding in line with the theoretical prediction that increased inequality may reduce the popular support for such policies. In contrast, changes in the political composition of

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[19]These findings are in line with Banerjee and Somanathan [2001]. They find that Indian districts with a higher scheduled tribe population get fewer public goods. This, however, is not the case with scheduled castes.

[20]In the model economic inequality, by changing λ^*, affects the popular support for different types of redistribution, and thereby the policy impact of political reservation. The importance of legislative bargaining procedures for the political voice enjoyed by minority legislators underlines the policy relevance of the political makeup of the state legislature.

[21]I find that the results for other policies are unaltered by the introduction of these additional covariates.

the legislature leave job quotas unaffected.

The last two columns consider tribal welfare programs. It is interesting that, unlike in the case of job quotas, political rather than economic inequality affects such spending. Increases in political concentration enhance spending on tribal welfare programs. It is relevant to note that increases in political concentration are usually accompanied by increases in the number of tribal legislators in the majority party. In contrast, such spending is lowered when scheduled caste legislators constitute a swing group. The latter finding is suggestive of inter-group conflict in policy-making.

In sum, it appears that the political make-up of the legislature and the extent of economic inequality affects policy, with the effect varying by type of policy. Broad-based policies, such as education, are hurt by increases in political and economic inequality. In the case of targeted policies the impact of these variables depends on the characteristics of the group targeted by the policy. Policies targeted towards scheduled tribes, a politically vulnerable group, are sensitive to changes in the composition of the legislature. In contrast, the policies preferred by the numerically larger and politically stronger group of scheduled castes are vulnerable to changes in economy wide income inequality.

Taken together, the results in Table VI and VII tell us that changes in legislator identity caused by political reservation have affected the mix of general and targeted redistribution across Indian States. These results are consistent with a model of political economy in which full policy commitment is absent, and minority legislators enjoy policy voice.

4.4   Robustness

My empirical analysis relies on state specific variation in political reservation in order to identify its effects on policy outcomes. Such variation is attributable to changes in the groups' population shares. In addition, I exploit time-lags in the responsiveness of political reservation to population changes to distinguish between the policy effects of changes in political reservation afforded to a group and changes in the group's population share. Given this identification strategy, a possible source of omitted variable bias is inadequate controls for group population share, by state. In this section I address this concern by reporting results for alternative specifications which provide additional controls for secular migration and population effects.

The main reason for changes in these groups population share has been differential fertility rates. Between 1961 and 1971, relative to the general population, population growth was slightly lower among scheduled caste and scheduled tribe populations. This was mainly

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reflected in higher infant mortality rates among these two groups. However, by the end of the 1960s infant mortality rates had converged, and since 1971 the Indian census consistently reports higher fertility, and population growth, rates among these groups. This finding is also corroborated by other surveys – for instance, the Indian Demographic and Health survey for 1993 reports all India total fertility rates amongst scheduled castes, scheduled tribes, and the rest of the population as 3.15, 3.06 and 2.60 respectively.

Inter-state migration rates in India remain low due to linguistic and cultural differences across states.[22] In addition, census data shows that scheduled caste and scheduled tribe migration rates do not differ significantly from those of the rest of the population (Cashin and Sahay [1995], Sebastian [1992]). However, one may still worry that even small amounts of policy–induced migration can imply that policy outcomes and group population shares are jointly determined. Therefore, in Panel A, Table VIII I report results for regressions which include controls for inter-state migration. The migration controls used are the average population share of scheduled castes and scheduled tribes in the neighboring states. Over 90 percent of inter-state migration in India is between neighboring states [Sebastian 1992]. It is therefore reasonable to expect these variables to capture omitted migration effects which may be correlated with population changes in an Indian State. Panel A tells us that the estimated effects of political reservation on policy outcomes are robust to the inclusion of these controls. The one exception is that increases in the group share of scheduled tribe legislators are no longer associated with a significant negative effect on education spending.

The institutional features of political reservation imply that the extent of representation afforded to scheduled castes and scheduled tribes responds to changes in their population share with a time-lag. Hence, we may be concerned that the political reservation variable confounds the effects of political representation on policy with those of lagged population shares. To check for this possibility I estimate regressions which include as additional controls population shares of these two groups lagged by different time-periods. The main results are robust to inclusion of such lagged population variables. Panel B, Table VIII reports the results for one such specification. This specification includes, in addition to current population shares, population shares for these groups lagged by two periods and the two group population shares as reported in the last census. Panel B tells us that the estimated relationship between political reservation and various policy outcomes is robust to the inclusion of these lagged population share variables.

Reliable state-wide estimates of scheduled caste and scheduled tribe population are only

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[22]In 1991, inter-state migration flows accounted for 5 percent of an average state's total migration flow.

provided by the decennial Indian census. The use of interpolated population data for inter-census years raises the concern that the annual population shares for these groups may be characterized by measurement error. In general, measurement error would lead to an atten-uation bias, i.e. the estimated effects of population shares on policy outcomes will be smaller than the true coefficients. Since no reliable alternative measures of these groups population shares exists, I use an instrumental variables approach to check that such measurement er-ror is not biasing my results. Instrumenting a variable which is potentially measured with error provides consistent estimates. Panel C, Table VIII reports results for two stage least square (2SLS) regressions, where I instrument for the scheduled caste and scheduled tribe population shares. My instruments are the population share for these groups in the most recent census. That is, in these 2SLS regressions I only consider that part of variation in a group's population share which is explained by the most recent decennial census pop-ulation estimates. The relationship between the political reservation variables and policy outcomes is robust to this specification, suggesting that measurement error is not driving this relationship.

The estimation strategy used in this paper relies on state specific over time changes in political reservation for identification purposes. Such changes in the extent of political reservation only occur in election years, and when new census population estimates have been received. As a final check I examine whether the results are robust to cutting the sample to two years pre- and post - such a change. That is, for every state I restrict the sample to the five year periods that are centered around an election in which the proportion of jurisdictions reserved for a group changed. The idea is to check whether the discontinuous changes in political reservation which occur in election year are associated with policy changes in this sample. Panel D, Table VII reports the results. Reductions in the sample size implies that our estimate of the policy effect of political reservation is more imprecise (i.e. standard errors are larger), but both the size and significance of the estimated effects are robust to this reduction in sample size. This specification also increases our confidence that omitted variable bias is not underlying the observed relationship between political reservation and policy outcomes – there is less reason to believe that the policy impact of omitted population variables would follow a similar discontinuous pattern.

Overall, the results in this Section demonstrate that the assumptions underlying my identification strategy are reasonable, and upheld by the data.

5 Discussion

This paper provides evidence that political representation for disadvantaged minorities can provide them with policy influence. I show that political reservation for scheduled castes and scheduled tribes in India has, in part, been responsible for the observed rise in targeted redistribution towards these groups over the last half-century. These findings also shed light on the functioning of the political process in India. Political reservation can affect policy outcomes only in the absence of full policy commitment, and even then its effect remains sensitive to the form of legislative bargaining and demographic composition of the electorate.

A number of countries, including the United States, have experimented with mandates that seek to enhance minority representation in legislatures. However, most of these experiments stop short of directly changing legislator identity. For instance, gerrymandering as practised in the United States sought to increase African American representation in the legislature by altering the composition of the electorate in some jurisdictions in favor of this group. Gerrymandering was successful in increasing African American representation in the legislature (Cameron, Epstein, and O'Halloran [1996], Overby and Cosgrove [1996]). However, as it altered both voter and legislator identity, isolating the policy effects of changes in legislator identity has proven difficult. The nature of the political reservation mandate in India allows us to make progress on this issue.

In this paper I use time lags in the responsiveness of political representation to population changes to isolate the effect of legislator identity on policy outcomes. Such time-lags arise because the extent of political reservation in place for a group is adjusted according to changes in the group's population share only when fresh census estimates arrive. Using decennial census estimates for electoral purposes is a commonly adopted practice in most democracies. This suggests that it may be possible to use variants of the identification strategy pursued in this paper to provide empirical evidence on other features of the political process. For instance, in many countries jurisdiction boundaries are redrawn after every decennial census so as to ensure equal populations in each jurisdiction. The time-lags between actual population growth across jurisdictions and the equalization of population across jurisdictions may be used to isolate the electoral consequences of legislative redistricting.

Finally, while political reservation has increased the political voice enjoyed by scheduled castes and scheduled tribes, the extent to which enhanced group voice translates into improved welfare outcomes for members of these groups remains an open and important question for future research. Clearly, the findings in this paper suggest that an important

element of any such research agenda must involve understanding the relative successes of targeted and broad-based redistribution in affecting the well-being of such groups.

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Mathematical Appendix

I start with some notations, and defining the basic assumptions made in the model.

Preferences

The utility function of individuals in the economy is given as

$$u_H^k = (1 - t)y^k + T$$

$$u_L^k = (1 - t)y^k + T + \delta$$

Let the parties be indexed by J where $J \in R, P$. Party J maximizes it's average member's payoff. That is, its objective function is:

$$W_J = (1 - t)y^k + T + \xi_J \delta$$

where ξ_J is the share of low caste members in a party. I assume this is less than the group's population share, i.e.

Assumption 1 $\xi_J < \lambda_L$

Legislature

Let π_J denote the proportion of jurisdictions in which party J fields low caste candidates.

Let δ_{Jc} and T_{Jc} be the preferred levels of targeted and non-targeted redistribution for a legislator of caste c belonging to party J. The legislative policy determination rule is defined as:

$$T_J^* = (1 - \psi(\pi_J))T_{JH} \text{ and } \delta_J^* = \psi(\pi_J)\delta_{JL}$$

when party J is the majority party. $\psi(\pi_J) \in [0, \pi_J]$ is a measure of low-caste legislators' policy influence. We assume $\psi(0) = 0$, and $\frac{\partial \psi(\pi_J)}{\partial \pi_J} > 0$.

Voting

In every jurisdiction a fraction α of the voters are rational, and a fraction $(1 - \alpha)$ are noise voters. Rational voters cast their vote to maximize their utility. Noise voters decisions are uncorrelated with candidate identity. In every jurisdiction a fraction β of the noise voters vote for party P, where β is a random variable with support $[0, 1]$ and cumulative distribution function $G(\beta)$. The function is symmetric, such that $G(\beta) = 1 - G(1 - \beta)$ for all β. That is, noise voters are unbiased.[23] The existence of such voters, by making election outcomes probabilistic, ensures the voting game has an equilibrium.

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[23]Introducing noise voters implies non-policy aspects of candidate identity e.g. charisma determines some citizens' voting behavior.

The electoral outcome depends on rational voters' voting choices, and the draw of β. Let ε denote the difference between the number of voters who favor party P, and those who favor party R. The party P candidate wins if

$$\alpha\varepsilon + (1-\alpha)\beta > (1-\alpha)(1-\beta)$$

or,

$$\beta > \frac{1}{2} - \frac{a\varepsilon}{2(1-\alpha)}$$

In probability terms a party P candidate wins in every jurisdiction with probability $\phi(\varepsilon)$, where $\phi(\varepsilon) = 0$ if $\varepsilon \leq -\frac{1-\alpha}{\alpha}$; $\phi(\varepsilon) = 1$ if $\varepsilon \geq \frac{1-\alpha}{\alpha}$, and $\phi(\varepsilon) = 1 - G(\frac{1}{2} - \frac{a\varepsilon}{2(1-\alpha)})$ otherwise. I assume $|\lambda^p - \lambda^r| < \frac{1-\alpha}{\alpha}$. If citizens vote along income lines, then both parties win with a positive probability. I assume a party which only attracts a single demographic group's vote enjoys a positive probability of winning, that is $\lambda_c^k - \lambda^{-k} - \lambda_{-c}^k > -\frac{1-\alpha}{\alpha}$.

In this model, a political equilibrium is a pair of party entry decisions π that are mutual best responses. Every such equilibrium is associated with a probability distribution over policy outcomes, where for party J: (i) the probability that its candidate set's favored policy outcomes are implemented equals its probability of electoral success, and (ii) the policy outcomes associated with it satisfy the legislative policy-making rule.

RESULT 1 *If Assumption 1 holds, then there always exists an equilibrium in which both parties only field high caste candidates and no targeted redistribution is undertaken.*

PROOF First note that with full policy commitment candidate identity is irrelevant to policy outcomes. Hence, in this case there always exists an equilibrium in which no low castes are fielded.

Now consider the case of no policy commitment. If $\pi_P = 0, \pi_R = 0$ then rational citizens vote along income lines, and party P wins with probability $\phi(\lambda^p - \lambda^r)$. In equilibrium no targeted redistribution occurs. Below, I show that $\pi_P = 0, \pi_R = 0$ constitute a pair of best responses.

First, consider the case where $\lambda^p > \lambda^*$. Here, party R's policy is independent of its choice of π_R since all party R members favor no redistribution. Hence $\pi_R = 0$ is a best response.

If $\pi_P = 0$ then the election of party P is only associated with non-targeted redistribution. By choosing $\pi_P > 0$, instead, party P is associated with both targeted and non-targeted redistribution (as poor low castes favor targeted redistribution). This cannot improve its electoral outcome as rich citizens never favor targeted redistribution. In addition, assumption 1 implies it will lower party P's payoff. Hence $\pi_P = 0$ is a dominant strategy for party

P.

Now, consider the case where $\lambda^p < \lambda^*$. Assume $\pi_R = 0$. If party P sets $\pi_P > 0$ then, relative to when $\pi_P = 0$ the voting decisions of rich high caste and poor low caste citizens are unaffected. Rich low-caste citizens switch to voting for party P if

$$(1 - \psi(\pi_P))\,(\lambda^p y^p + \lambda^r y^r) + \psi(\pi_P)(\frac{\lambda^p y^p + \lambda^r y^r}{\lambda_L}) > y^r$$

and poor high-caste citizens continue voting for party P if

$$(1 - \psi(\pi_P))\,(\lambda^p y^p + \lambda^r y^r) > y^p$$

These two conditions are jointly satisfied if $\lambda_H^r > \lambda_L^p$.

Such a deviation maximizes party P's payoff if

$$\phi(\hat{\lambda})\,(W_P(\delta_P^*(\pi_P); T_P^*(\pi_P)) + \left(1 - \phi(\hat{\lambda})\right)(W_P(\delta_R^*(0); T_R^*(0)))$$

$$> \phi(\lambda^p - \lambda^r)\,(W_P(\delta_P^*(0); T_P^*(0)) + (1 - \phi(\lambda^p - \lambda^r))\,(W_P(\delta_R^*(0); T_R^*(0))$$

where $\hat{\lambda} = \lambda^p + \lambda_L^r - \lambda_H^r$. Solving this out gives:

$$\psi(\pi_P)(\phi(\hat{\lambda})\left(\frac{\lambda^p y^p + \lambda^r y^r}{\lambda_L}\right)(\xi_P - \lambda_L) > (\phi(\hat{\lambda}) - \phi(\lambda^p - \lambda^r))\,(\lambda^r(y^r - y^p))$$

By assumption 1 $\xi_P < \lambda_L$. Hence the left hand side is negative while the right hand side is positive, and the above inequality cannot hold. This implies that given $\pi^R = 0$, $\pi^P = 0$ is a best response. A symmetric argument can be used to show that given $\pi^P = 0$, $\pi^R = 0$ is a best response.

Data Appendix

The data-set used in this paper builds on an Indian state-level data-set collated by Ozler, Datt, and Ravallion [1996] and updated by Besley and Burgess [2000]. The data-set includes the sixteen major Indian states: Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. Punjab and Harayana enter the data-set in 1965.[24]

The deflators used are the 'Consumer Price Index for Agricultural Laborers' (CPIAL) and Consumer Price index for Industrial Workers' (CPIIW), and come from Government of India publications (Indian Labor Handbook, the Indian Labor Journal, the Indian Labor Gazette and Reserve Bank of India Report on Currency and Finance. The reference period for the deflator is 1973-74.

Population data This comes from the decennial censuses from 1951 through 1991 (Census of India, Registrar General) and has been interpolated for the inter-census years. In keeping with the Scheduled Castes and Scheduled Tribes Orders (Amendment) Act, 1976 the Census issued fresh estimates of scheduled caste and scheduled tribe population in 1977. For the period 1977-1981 these estimates are used as the base for interpolation. The age distribution of population variables (proportion population aged 15-34 and proportion population aged over 35) are similarly created, and expressed as a proportion of total population. Population density takes interpolated total population data from the Census and divides this by total land area of the state, as reported in the Census Atlas.

Political data These come from Election Commission reports for state elections. The political Herfindahl index is the sum of squares of the party shares of all parties in a state's legislature. The scheduled caste (scheduled tribe) swing index equals one if the majority party in the state relies on scheduled caste (scheduled tribe) legislators for its majority status, and zero otherwise. The election dummy takes a value one in the year of a state election, and zero otherwise.

Public finance variables The general public finance variables are from the Reserve Bank of India Report on Currency and Finance, while the targeted expenditure variables are from the annual Ministry of Welfare handbook. The variable descriptions are as below:

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[24]Haryana was created in 1965, by splitting up Punjab.

- State expenditure per capita is the total state expenditure during the budget year expressed in real per capita terms. Data is missing for Jammu/Kashmir (1992)

- Education expenditure share is the share of total state expenditure going to elementary, secondary, university and higher, technical and adult education.

- Scheduled caste welfare share is the share of total state expenditure going to scheduled caste welfare plans. 1981 data is missing for Jammu-Kashmir, and 1984 data for all states except Andhra Pradesh, Assam and Jammu-Kashmir.

- Scheduled tribe welfare share is the share of total state expenditure going to scheduled tribe welfare plans. 1974 data is missing for Maharashtra, Tamil Nadu and Uttar Pradesh, 1975 data for Uttar Pradesh and 1986 data for Andhra Pradesh and Uttar Pradesh.

Land Reform   The Land reform index is a dummy variable which equals one for an Indian state in the year in which the state legislature passed a land reform legislation, and is zero otherwise. This variable was created and used in Besley and Burgess [2000].[25]

Job quota   The job quota variable is the proportion of state government jobs which are reserved for scheduled castes and scheduled tribes. The data source is the annual Scheduled caste and Scheduled tribe Commissioner's reports.

State income   The variable used is the log of the real per capita state income. The data source is: Estimates of State Domestic Product, published by Ministry of Planning, Government of India.

Gini coefficient   This is constructed from the National Sample Surveys for India, and is taken from the Ozler, Datt, and Ravallion [1996] data-set. 1960 and 1992 data is missing for Jammu and Kashmir.

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[25]Four types of reforms were considered: tenancy reform, abolition of intermediaries, ceilings on land holdings and consolidation of land plots.

TABLE II LEGAL IDENTIFICATION OF SCHEDULED CASTES AND SCHEDULED TRIBES

Selection criteria for scheduled castes

1. Cannot be served by clean Brahmans

2. Cannot be served by the barbers, water-carriers, tailors etc. who serve the caste Hindus

3. Pollutes a high-caste Hindu by contact or by proximity

4. Is one from whose hands a caste Hindu cannot take water

5. Is debarred from using public amenities such as roads, ferries, wells or schools

6. Will not be treated as an equal by high-caste men of the same educational qualification in ordinary social intercourse

7. Is depressed on account of the occupation followed and, but for that, occupation would be subject to no social disability

Selection criteria for scheduled tribes

1. Tribal origin

2. Primitive ways of life and habitation in remote and less accessible areas

3. General backwardness in all respects

Note: The above criteria were the stated basis for the selection of caste and tribe communities as 'scheduled caste' and 'scheduled tribe' communities in the 1950 Presidential orders.

TABLE III ECONOMIC CHARACTERISTICS OF SCHEDULED CASTES (SC) AND
 SCHEDULED TRIBES (ST): 1991 CENSUS

Variable	Non-SC/ST	SC	ST
Overall population share	75.4	16.4	7.9
Within group characteristics:			
Urban population share	29.2	18.7	7.3
Literacy rate	57.8	37.4	29.6
Labor force participation rate	32.8	36	42
Percent labor force in the primary sector	62.1	77.1	90
Percent population below poverty line	31.15	53.1	58.4

Notes:

(i) The source for these data is the 1991 census of India, except for poverty data. The poverty data is from the the 1983-1984 National Sample Survey

(ii) The primary sector includes those employed in agricultural and allied activities.

(iii) Within group characteristics are reported as a percentage of the group's population

TABLE IV: CHANGES IN NUMBER OF RESERVED JURISDICTIONS

Election year	Reason	Commission
1962	Double member jurisdictions abolished	Election commission
1965	Creation of Haryana	Election commission
1967	Revised in line with 1961 census	Delimitation commission
1972, 1974, 1976	Revised in line with 1971 census	Delimitation commission
1977, 1980	Revised in line with 1976 Area restriction removal act	Election commission

TABLE V DESCRIPTIVE STATISTICS

Variable	Mean	Std. Dev
Policy variables		
Total state spending Of which:	153	(87.36)
Education spending share	21.51	(4.487)
Scheduled caste (SC) welfare spending share	3.208	(2.196)
Scheduled tribe (ST) welfare spending share	2.957	(4.078)
Land reform	0.126	(0.455)
Job quota	22.61	(10.39)
Political variables		
Proportion jurisdictions reserved for scheduled castes	13.93	(5.296)
Proportion jurisdictions reserved for scheduled tribe	7.36	(7.703)
Political Herfindahl index	0.416	(0.192)
Scheduled caste swing index	0.178	(0.383)
Scheduled tribe swing index	0.072	(0.260)
Demographic variables		
Proportion scheduled caste population	14.27	(5.664)
Proportion scheduled tribe population	7.367	(7.485)
Population density	253	(165.6)
Population aged 15-34	32.25	(1.700)
Population aged 35+	27.38	(1.863)
Other economic variables		
Real state income per capita	1030.5	(346.12)
Gini coefficient	29.7	(3.756)

Notes:

(i) Total spending is expressed in real per capita terms, while education, SC and ST welfare spending are
expressed as a proportion of total spending. Land reform is a dummy variable which equals one when a
land reform act is passed. Job quota is the percentage of state govt. jobs which are reserved for SC and
 ST. See the Data Appendix for detail on construction and source of variables.

(ii) The data are for sixteen Indian states, Punjab and Haryana enter the sample after 1965.

(iii) The data covers the period 1960-1992, except for the share of total spending going to
 scheduled caste and scheduled tribe welfare which is available for 1974-1992.

TABLE VI POLITICAL RESERVATION AND POLICY OUTCOMES

	Total state spending	Education spending share	Land reform	Job quota	SC welfare spending share	ST welfare spending share
	(1)	(2)	(3)	(4)	(5)	(6)
Proportion jurisdictions reserved	2.291	-0.383***	0.024*	0.639***	0.027	-0.280
for scheduled castes	(1.590)	(0.098)	(0.014)	(0.167)	(0.199)	(0.274)
Proportion jurisdictions reserved	0.75	-0.366**	0.024	0.123	0.089	0.969***
for scheduled tribes	(0.978)	(0.161)	(0.018)	(0.234)	(0.113)	(0.343)
F-test for equality of scheduled caste	1.13	0.01	0	3.44	0.07	11.36
and scheduled tribe reservation	(0.28)	(0.92)	(0.99)	(0.06)	(0.79)	(0.00)
Population share of	4.316***	0.262*	0.022	0.569**	0.059	-0.441**
scheduled castes	(1.336)	(0.140)	(0.017)	(0.219)	(0.131)	(0.187)
Population share of	-2.428*	-0.457**	0.013	-0.009	-0.027	-0.547**
scheduled tribes	(1.411)	(0.179)	(0.020)	(0.280)	(0.137)	(0.267)
F-test for equality of scheduled caste	8.58	7.29	0.08	1.92	0.13	0.08
and scheduled tribe population	(0.003)	(0.007)	(0.77)	(0.168)	(0.79)	(0.77)
Adjusted R-squared	0.93	0.75	0.21	0.9	0.76	0.86
Number of observations	503	497	503	503	271	295

Notes:

(i) Robust standard errors reported in parentheses.

(ii) Total spending is expressed in real per capita terms. Education, SC and ST welfare spending are expressed as a proportion of total spending. Land reform
is a dummy variable which equals one when a land reform act is passed. Job quota is the percentage of state government jobs reserved for SC and ST.

(iii) Population density, proportion population aged 15-34, proportion population aged 35+, log real state income per capita and an election dummy are included
as covariates in all regressions. All regressions also include state and year dummies.

(iv) * denotes significance at 10%, ** at 5% and *** at 1%.

TABLE VII POLITICAL RESERVATION, INEQUALITY AND POLICY OUTCOMES

	Education spending share		Job quota		ST welfare spending share	
	(1)	(2)	(3)	(4)	(5)	(6)
Proportion jurisdictions reserved for scheduled castes	-0.398***	-0.349***	0.590***	0.607***	-0.314	-0.285
	(0.103)	(0.101)	(0.171)	(0.172)	(0.273)	(0.265)
Proportion jurisdictions reserved for scheduled tribes	-0.348**	-0.323**	0.163	0.178	0.965***	0.975***
	(0.169)	(0.159)	(0.240)	(0.242)	(0.339)	(0.341)
F-test for equality of scheduled caste and scheduled tribe reservation	0.07	0.02	2.26	2.3	11.75	11.94
	(0.794)	(0.88)	(0.130)	(0.130)	(0.0007)	(0.00)
Population share of scheduled castes	0.24	0.291*	0.549**	0.565**	-0.377**	-0.382**
	(0.148)	(0.158)	(0.234)	(0.236)	(0.184)	(0.185)
Population share of scheduled tribes	-0.499***	-0.433**	-0.006	0.025	-0.444*	-0.472**
	(0.186)	(0.181)	(0.288)	(0.288)	(0.258)	(0.257)
F-test for equality of scheduled caste and scheduled tribe reservation	6.86	6.48	1.58	1.52	0.03	0.06
	(0.009)	(0.01)	(0.20)	(0.21)	(0.85)	(0.80)
Gini coefficient	-0.148**	-0.180***	-0.146*	-0.148*	0.023	0.014
	(0.059)	(0.057)	(0.085)	(0.085)	(0.051)	(0.054)
Political herfindahl index	-1.857**	-1.964**	-1.092	-0.985	2.658***	2.380**
	(0.840)	(0.865)	(0.991)	(0.973)	(0.939)	(0.967)
Scheduled caste swing variable		0.774**		0.525		-0.687**
		(0.374)		(0.95)		(0.311)
Scheduled tribe swing variable		-2.019***		-0.495		0.183
		(0.468)		(0.763)		(0.910)
Adjusted R-squared	0.76	0.77	0.9	0.9	0.86	0.86
Number of observations	489	489	495	495	287	287

Notes:
(i) Robust standard errors reported in parentheses.
(ii) Education and ST welfare spending are expressed as a proportion of total spending. Job quota is the percentage of state govt. jobs which are reserved for SC and ST. The political herfindahl index is the sum of square of legislator shares of political parties. The SC (ST) swing index takes a value one if the majority party in the state relies on SC (ST) legislators for its majority status.
(iii) Population density, proportion population aged 15-34, proportion population aged 35+, log real state income per capita, an election dummy and state and year dummies are included in all regressions as controls.
(iv) * denotes significance at 10%, ** at 5% and *** at 1%.

TABLE VIII: ALTERNATIVE SPECIFICATIONS

	Dep. variable: Education spending	Dep. variable: Job quotas	Dep. variable:ST welfare spending share
Panel A: Migration controls			
Explanatory variables:			
Proportion jurisdictions reserved	-0.362***	0.390**	-0.35
for Scheduled castes	(0.105)	(0.181)	(0.289)
Proportion jurisdictions reserved	-0.213	0.250	0.891***
for Scheduled tribes	(0.155)	(0.213)	(0.348)
Panel B: Lagged population controls			
Explanatory variables:			
Proportion jurisdictions reserved	-0.426***	0.306**	0.204
for Scheduled castes	(0.100)	(0.154)	(0.258)
Proportion jurisdictions reserved	-0.454**	-0.468	1.091***
for Scheduled tribes	(0.180)	(0.297)	(0.373)
Panel C: Instrumenting for SC and ST population shares			
Explanatory variables:			
Proportion jurisdictions reserved	-0.481***	0.426***	-0.291
for Scheduled castes	(0.099)	(0.160)	(0.232)
Proportion jurisdictions reserved	-0.590***	-0.364	0.894***
for Scheduled tribes	(0.164)	(0.231)	(0.329)
Panel D: Discontinuity sample			
Explanatory variables:			
Proportion jurisdictions reserved	-0.455***	0.505**	-0.071
for Scheduled castes	(0.155)	(0.227)	(0.278)
Proportion jurisdictions reserved	-0.530**	-0.091	1.204***
for Scheduled tribes	(0.239)	(0.249)	(0.368)

Notes:

(i) Robust standard errors reported in parentheses.

(ii) Education and ST welfare spending are expressed as a proportion of total spending. Job quota is the percentage of state govt. jobs which are reserved for SC and ST.

(iii) Population density, proportion population aged 15-34, proportion population aged 35+, log real state income per capita, an election dummy, and state and year dummies are included in all regressions as controls.

(iv) Panel A: The migration controls included are the average population shares of scheduled tribes and scheduled castes in neighboring states. Panel B: the lagged population controls included are SC and ST lagged two periods, and the SC and ST population shares in the last census. Panel C: The SC and ST population shares are instrumented by the SC and ST population share in the last census. Panel D: The discontinuity sample includes for each state data for two years prior to an election in which the proportion reserved jurisdictions changed, data for the election year and two subsequent years.

(v) In Panel D, the number of observations for the education spending and job quoata regressions is 178, and for the tribal welfare spending regression is 82.

(vi) * denotes significance at 10%, ** at 5% and *** at 1%.