Parochial Politics: Ethnic Preferences and Politician Corruption

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Abstract

This paper examines how increased voter ethnicization, defined as a greater preference for the party representing one's ethnic group, affects politician quality. If politics is characterized by incomplete policy commitment, then ethnicization reduces average winner quality for the pro-majority party with the opposite true for the minority party. The effect increases with greater numerical dominance of the majority (and so social homogeneity). Empirical evidence from a survey on politician corruption that we conducted in North India is remarkably consistent with our theoretical predictions.

1 Introduction

> Our vote and your rule, this will not work anymore
>
> *Campaign slogan of BSP, an Indian low caste party*

This paper sets out to make an almost elementary point: If voters care about the ethnic identification of politicians, then candidates and/or parties that are associated with the dominant group in a jurisdiction have an obvious competitive advantage. They will win even when along other dimensions – competence, probity etc., i.e. what, for want of better word, we will call quality – they are not quite as good.

This simple observation has an important corollary: as a polity becomes more ethnicized in that citizens become likely to vote following ethnic identity rather than any other marker, the quality of its political representation will worsen. This is for two reasons: first, the probability that the

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dominant group candidates, who tend to be worse, win, goes up; second, the quality threshold at which a dominant group can win, goes down.

While perhaps obvious, it is worth pointing out, that there is a clear tension between this view, and the increasingly standard view that ethnically fragmented societies typically have worse economic outcomes.[1] In a context where voting is ethnicized making the dominant group larger will usually make a jurisdiction more homogenous and less fragmented. This suggests that we seem to have identified a mechanism that under some circumstances actually leads to better outcomes in more fragmented jurisdictions.

Of course, this argument is incomplete. If the electorate was almost entirely homogenous, we would not expect ethnicity to be an important consideration for voters and therefore the mechanism we emphasize would not operate.[2] However, having homogenous jurisdictions is unlikely to be sufficient if the electorate as a whole is divided. The reason is that under most electoral systems individual jurisdictions elect legislators who represent them in a multi-legislator parliament and each group will seek to capture control of the parliament.[3]

Is the effect that we highlight worth taking seriously as a practical matter? To answer this question we look at data from a North Indian state, Uttar Pradesh (UP), which is famous for its ethnicity (meaning caste in this case) based politics.

Our analysis draws upon a field survey which we conducted in 2003. For over a hundred jurisdictions we collected information on the economic outcomes, and criminal activity, of politicians who either won, or came second, in the 1980 and 1996 election. These data allow us to ask how the numerical dominance of specific caste groups in a jurisdiction affected the quality of elected politicians. However such a purely cross-sectional comparison would suffer from obvious problems: any omitted characteristics of the jurisdiction could be driving the result.

Therefore, instead of conducting a cross-sectional comparison, we exploit the well-documented rise in caste-based identification among voters between 1980 and 1996. The fact that voter ethnicization led to whichever ethnic group was numerically dominant in a particular jurisdiction

[1] Existing evidence, largely from cross-sectional regressions, suggests that low income countries are particularly susceptible to such divisions, and that this, in turn, is correlated with reduced GDP (Alesina, Baqir, and Easterly 1999), lower GDP growth (Easterly and Levine 1997), worse private provision of public goods (Miguel and Gugerty (2004), Khwaja (2004)) and increased corruption (Mauro 1995).

[2] For a model where ethnic political competition emerges endogenously under specific conditions, see Esteban and Ray (2006).

[3] An implication is that the way the groups are distributed across jurisdictions matters, and partisan gerrymandering, which typically increases social homogeneity within jurisdictions, can create substantial inefficiencies.

became even more electorally dominant over this period allows us to look at the effect of increased electoral dominance *within the same jurisdiction.* To distinguish the effect we are interested in from any other time trend we make use of the fact that our model predicts very different trends for winners from the parties associated with the numerically dominant group in that jurisdiction and the winners from the other parties: the average majority party winner should become worse over time while the average minority party winner should improve. Moreover, since the identity of the majority party varies across jurisdictions, this strategy allows us to control for differential time trends by party. The effect that interests us is the differential change in the quality of politicians who belong to the same party but are elected from jurisdictions with different ethnic makeup (i.e. our effect is identified off the triple interaction of time, party identity and ethnic composition of the jurisdiction).

Our empirical analysis strongly supports the proposed theory. Moreover, the magnitude of the identified effects of increased ethnicization, measured by politician corruption, are relatively large. Our results suggest that, at least along some dimensions, the entire increase in corruption in our sample jurisdictions between 1980 and 1996 is attributable to the politician affiliated with the party that shared the ethnic identity of the dominant population group in that jurisdiction. Further, the entire increase was concentrated in jurisdictions with very substantial one-group domination.

The structure of this paper is as follows: Section 2 locates this research within the existing literature, with the goal of explaining our focus on this particular mechanism. Section 3 provides the historical background and social context of this study; this also provides a justification for our empirical approach. Section 4 develops a simple model of political competition which identifies how increased ethnicization of the voter population reduces politician quality. Section 5 describes our data-set and discusses some measurement and estimation issues. Section 6 provides the main results about the differential trends in political corruption for dominant party winners vis a vis other winners. We also show that over time changes in the quality of the average winner in a jurisdiction, relative to the quality of the runner-up, are very consistent with our model (these regressions are able to account for jurisdiction specific time-trends). Finally, we provide multiple specification checks and further interpretations of the results. Section 7 concludes.

2 Related Literature

In section 1 we mentioned the empirical literature that associates fragmented societies with less good economic and political outcomes. Miguel and Gugerty (2004) suggest one explanation for this – the greater ability of more homogenous groups to punish free-riding members of their group. While plausible and potentially important in some contexts, it is not clear how this could be applied to the case of voting: While uninformed voters can, and perhaps do, free-ride on the choices of those who have taken the trouble to inform themselves, it is hard to imagine that anyone can really force others to become informed voters.

The argument made by Alesina, Baqir, and Easterly (1999) – that social divisions hurt because it makes it harder for the groups to agree on a preferred public good – is closer to our argument. The probity or quality of the elected politician could be the relevant public good, with the inter-group disagreement coming from the fact that, conditional on quality, every group wants its own man to win. However, their empirical analysis assumes that investment in public goods is declining in ethnic fractionalization. Since ethnic fractionalization reduces with the increase in the numerical size of the largest group, their model predicts that public good provision improves as the numerical dominance of a group increases. While their theoretical analysis does not explicitly consider this case, the logic seems to be that a more dominant group should be better placed to get its preferred public good, and therefore more willing to invest in public goods.

Within the median voter model that they have in mind, this makes a lot of sense since politicians will compete to make the dominant group happy. By contrast in our model, which is in the tradition of the citizen-candidate (Besley and Coate (1997), Osborne and Slivinski (1996)), or the partisan politics (see, for instance, Alesina and Rosenthal (1989)), models political competition is less effective, because politicians cannot commit to policies. What voters can select is the party/candidate they will vote for, and even here the scarcity of credible candidates limits the choice. For example, our model assumes that only one party can credibly commit, to whatever limited extent, to serve the specific interests of the numerically dominant group. Therefore voters from that group have no choice but to vote for the candidate chosen by that party if they want someone who is friendly to them. Hence, an increase in their numerical dominance does not change their choice set: it only makes it easier for the candidate from the party that is aligned with them to win, and this lowers average winner quality. In other words, the public

good – candidate quality – suffers when the dominant group becomes more dominant, unlike in the Alesina, Baqir, and Easterly (1999) world.

Esteban and Ray (1994) come at the question of social divisions from the point of view of violent conflicts. They make the argument that, conditional on a conflict occurring, the intensity of conflict is maximized with two roughly equal sized groups: If one group is really dominant then it will also dominate a conflict, and if there are multiple smaller groups then conflict will, again, be less intense. From these arguments they derive the Esteban-Ray measure of polarization (ERP), which is a measure that reaches its peak when there are two large groups in the population, and suggest that, conditional on a conflict occurring, the intensity of conflict will be increasing in this measure.

Why should voting patterns be ethnicized? In the primordialist view (Shils (1957), Huntington (1996)) this is largely because voters have no choice: They feel an instinctive pull towards their co-ethnics. However as Fearon (1999), points out it is hard to square this view with the well-documented fact that the same person may vote along ethnic lines in one set of elections and along class or other lines in another set of elections. Moreover as both Horowitz (1985) and Bates (1983) document, ethnic identities often get more or less emphasized in response to changes in the political environment (such as changes in jurisdictional or national boundaries).

The more compelling explanations are functional: one class of explanations is that a shared language or a shared social network makes political action easier to organize along ethnic lines, (Bates (1983), Fearon and Laitin (1996)). The alternative view is that it is easy to target patronage along ethnic lines (Chandra (2004), Glaeser and Goldin (1995)). Moreover since ethnic identities are relatively fixed, the incentive to fight to claim power for one's ethnic group tend to be relatively strong, because there is less risk that others will adopt the same identity in order to lay a claim on the rents from power (Fearon (1999), Caselli and Coleman (2005)).

For our argument to be empirically important, we need to observe a significant association between voters' social and political identities: a growing literature in political science documents significant political polarization along ethnic lines in many democracies. This is often manifested as explicitly ethnic political parties, i.e. parties which derive their support from, and claim to serve the interests of, an identifiable ethnic group. In a classic book on ethnic conflict Horowitz (1985) argued that political parties in low income countries are more likely to be organized along ethnic lines, and that in regions and countries dominated by ethnic party competition,

the parties which represent the largest ethnic group tend to have an electoral advantage.

Electoral data support Horowitz (1985)'s claims. Ethnic parties are less dominant in richer countries, though Canada, Belgium and Spain are important exceptions (Alonso 2005).[4] In contrast, the political landscape of a majority of Subsaharan African countries, and many Asian countries, is dominated by ethnic parties. Both electoral and public opinion data show a significant electoral advantage for the party representing the dominant ethnic group across a broad swathe of African countries (Posner (2007) and Norris and Mattes (2003)) and in many Asian countries including Malaysia, Sri Lanka and, at the regional level, India (Brown (1996), Horowitz (1985), Chandra (2004)).

While our theory does not directly rely on the reason why voters favor ethnic parties, it does affect the interpretation of our results, especially in welfare terms. At one extreme if the support for ethnic parties comes from their ability to provide effective redistribution then their presence provides real value to some voters and our valuation of ethnic politics would depend on how we weigh the preferences of the beneficiary groups relative to the losers. On the other hand, if all voters get from their own ethnic party is the assurance that they would be protected from its rapacity, which would be directed towards other ethnic groups (Myerson (1993), Miquel (2006)), then it seems clear that everyone would be better off if a more honest politician were to win who does not extract resources from the polity for his personal benefit. Yet another possibility is that politicians do very little for their supporters, either because they are too busy doing things for themselves or because they cannot really target very effectively. In that case a voter might still favor his own ethnic party for historical, social or symbolic reasons, but there would be no reason to believe that changes in the politician's identity substantially alters redistribution between these groups.[5]

Finally, our paper is a part of the growing literature that draws its main insights about how politicians and public policies are selected from the multidimensional nature of political competition. The closest to our model is Alesina and Rosenthal (1995, Chapter 8) who build a model

[4]Also, after the collapse of communism, a number of East European countries have seen the rise of ethnic politics, most famously the region that used to be called Yugoslavia (Somer (2001), Bugajski (1995)). Political parties in Latin American countries have tended to differentiate on class lines, however, indigenous parties have enjoyed recent electoral success in some Latin American countries, especially Bolivia and Ecuador and, to more limited extent, Colombia, Nicaragua and Venezuela (Cott 2005).

[5]If this were the case, and voters were rational in holding these preferences, we expect the effects of group dominance on politician quality would relatively small.

where voters care about a common dimension (which they call competence) and a conflictual dimension (which they call ideology) and there is partisan voting. Other related contributions include Glaeser, Ponzetto, and Shapiro (2005) and Myerson (1993).

3 Context: The Rise of Ethnic Politics in Uttar Pradesh

Ethnic politics in India is closely linked to the structure of the Hindu caste system. Every Hindu is born into a caste – a hierarchical social ordering of population groups. Historically, an individual's caste determined both her economic outcomes and social status, with lower castes facing significant social and economic disadvantage. To enable affirmative action in favor of such castes the Indian government identified historically disadvantaged castes as Scheduled Castes (SC) and Other Backward Castes (OBC). In many parts of India, including Uttar Pradesh, these two groups together constitute a population majority.

There are also caste divisions among other Indian religions and tribes – Christians, Muslims, Sikhs and Scheduled Tribes – though these have no theological basis within those religions. Moreover, in most of India these religious groups are a relatively small minority, and are more likely to view themselves as a single group rather than a collection of even smaller individual groups with both a caste and religious identity. For all these reason we focus on Hindu low castes in this study, while recognizing that any such distinction remains, inevitably, imperfect.

Our analysis focuses on India's most populous state, Uttar Pradesh (UP), which has a population of 166 million. Over 80% of it's population is Hindu by religion. According to the 1931 census (the last Indian census to collect caste data), upper castes make up roughly 20% of UP's population while a majority of its population (57%) is low caste.

At Independence, the Congress Party dominated both national and UP politics. While Congress, the party of Mahatma Gandhi, clearly aspired to be the party of all Indians, its leadership in UP had historically been upper caste. In 1960 roughly 60% of its legislators were upper caste and less than 10% lower castes (Meyer 1969).[6] Congress party leadership showed a similar pattern – in 1968 75% of the UP Congress Committee members were upper caste. A single president of its branches at the district or town-level was SC and none were OBC (Jaffrelot 2003).

In the early years after Independence the main opposition party was the Jan Sangh, a right-wing

[6]The rest were non-Hindus and individuals belonging to the so-called middle castes.

Party dedicated to the cause of Hindu nationalism, and entirely dominated, perhaps unsurprisingly, by urban upper caste Hindus. The various communist and socialist parties, including the Bhartiya Kisan Dal (BKD), constituted the third and only major block that attempted to align itself with lower caste interests and to cultivate lower caste leaders.[7] During the 1960s their explicit focus was on class rather than caste. In two brief episodes in the late 1960s and early 1970s, BKD was part of coalition government that ruled UP. In the early 1970s the socialists and BKD merged to form the Bhartiya Lok Dal (BLD), which claimed to represent peasants and the rural poor more generally. Relative to the other parties, it was seen by many as more pro-lower caste (more specifically pro-OBC). In 1977, the Janata Party, born of a (temporary) merger of the BLD with the Jan Sangh, swept the UP elections. In 1980 the Janata party fell apart and Congress regained control of the UP state legislature until after 1984.

Despite this challenge from the left, especially after 1977, the basic pattern of political representation did not significantly alter until the mid-1980s. The share of low caste legislators remained at, or below, 25% until (and including) 1980, with the exception of 1967 and 1969 when it crossed 30% (Figure 1). Throughout this period (including 1977 the year of the Janata wave) a large majority of this representation was explained by the law that reserves approximately 20% of all seats for contests exclusively between SC candidates.

However, after 1984 things changed quite drastically. In 1984 an explicitly low caste, specifically SC party, the Bahujan Samaj Party (BSP) was formed. The party campaign slogans make its ethnic nature clear it explicitly targeted anti-upper caste sentiments (*Brahmins, Thakurs and Banias are thieves, the rest belong to the oppressed group*) and used the population size of lower castes as a justification for its quest for power (*85% living under the rule of 15%, this will not last, this will not last* and *The highest number has to be the best represented.*) A second low caste party which mainly targeted OBC voters, the Samajwadi Party (SP), was formed in 1992. Since the early 1990s one (or both) of these two parties has been a part of the elected UP state government. Figure 2 shows the very substantial rise in the vote share of these two low caste parties since the mid 1980s.

Prominent explanations for the rise in the political salience of ethnicity include the growth of popular low caste movements spearheaded by individuals who went on to form low caste parties

[7] BKD was formed in 1967 when a group of Congress legislators led by a non-upper caste politician broke away to set up a pro-peasant party

(Yadav 2000); affirmative action and agricultural growth which created a class of middle class low caste citizens who demanded political recognition and social change (Chandra 2004) and the political use of affirmative action, especially by the socialist parties (Jaffrelot 2003): in 1989, the federal government led by the Janata Dal leader V.P. Singh, announced that roughly 50% of public sector jobs will be reserved for lower castes. The upper castes rose up in violent protest all over North India, and UP was one of the most affected states. In part due to this, and other evidence of the growing influence of lower castes, the position of the upper caste Hindus also hardened along both caste and religious lines, reflected in the growing influence of the Bharatiya Janata Party. The BJP, as it is called, went from two legislators in the 1980 legislature to being the dominant party of the ruling coalition in 1991.

By the late 1990s voter survey data shows significant alignment of voters along caste lines: upper caste voters were overwhelmingly more like to vote for the Congress and the BJP, the two non-low caste parties, while lower castes predominantly voted for SP and BSP (Table 1). While similar data is unavailable for earlier years electoral data suggests an increase in the ethnicization of voting patterns since 1980. Table 2 compares electoral outcomes in a representative sample of jurisdictions (these are also the 102 jurisdictions covered by our politician survey) in 1980 and 1996. We measure low caste presence in a jurisdiction by the low caste population share (now on, LOshare; the construction of this variable is further discussed in Section 5). For the set of majority and non-majority LOshare jurisdictions, we compute the fraction of jurisdictions from which a non-low caste party candidate (i.e. a Congress or BJP candidate) was elected in 1980 and 1996. Relative to a jurisdiction which is less than 50% LOshare, the probability that a non-low caste party candidate was elected legislator from a majority LOshare jurisdiction fell by 38% between 1980 and 1996.[8] In other words, the period between 1980 and 1996 is marked by the emergence of a strong negative correlation between the low caste population share and the electoral success of the non-low caste parties.

The historical discussion above, and the evidence presented, suggests a significant ethnicization of UP politics along caste lines between 1980 and 1996. In the rest of the paper we take this change as given, and look for other implications of increased voter ethnicization. In particular, it is widely held that corruption and criminality among UP politicians has increased in the period

[8]Using a continuous measure of LOshare in a regression framework suggests that, between 1980 and 1996, a 1% increase in the low caste population share of a jurisdiction reduced the likelihood that a non-low caste party candidate would win by 2.7%.

since 1980. Our detailed evidence, which will be described later, corroborates this claim. For the moment it suffices to mention that our survey shows that, between 1980 and 1996, the fraction of UP state politicians who either won or came second in the election and had a criminal record doubled from 7.6% to 16.2%. The rest of this paper focusses on the connection between increased ethnicization of the voter population and the increase in corruption and criminalization.

4 Parochial politics and Politician Corruption: Theory

4.1 A model of multi-dimensional political competition

A key element of our theory is an intensification of ethnic preferences, or ethnicization, among voters. To allow for this we assume a large population of voters characterized by a scalar $\lambda \in [\lambda_0, \lambda_1]$, $\lambda_0 < 0 < \lambda_1$, distributed as $G(\lambda, \delta)$, where δ is a parameter that shifts the distribution. Assume that $G(\lambda, \delta)$ is symmetric around its mean. In addition, almost without loss of generality, we assume that $\lambda_0 + \lambda_1 < 0$. That is, more of the weight of the distribution is in the negative orthant. Since G is symmetric around its mean, its median, λ_m is the same as its mean, and by our previous assumptions, $\lambda_m < 0$. In our model λ is a measure of how aligned a voter's interests are with those of the majority population group. Someone with a $\lambda < 0$ is better off when a politician pursues a pro-majority policy, while someone with a $\lambda > 0$ is worse off.

We have in mind a citizen candidate model in which enough people want to run, even if they have no chance of winning. The affinity with the citizen-candidate models comes from candidates' inability to fully commit to specific policies in order to win elections. Voters base their candidate choice on expected politician behavior. This, in turn, depends on politician characteristics.

Each politician is characterized by a vector (Q, P). Q represents quality—probity, charisma, competence, commitment—something that all voters value equally. P represents parochialism, or more specifically the willingness to favor the majority group. P can be positive or negative, so a politician's parochialism is measured by $|P|$. A voter λ evaluates politician (Q, P) using the metric $Q + \lambda P$.

Candidates enter elections through one of two political parties, indexed as $j \in (L, R)$. A party chooses its candidates to maximize its chances of winning. Party j is characterized by a list of potential candidates $C_j = \{(Q_j^1, P_j^1), (Q_j^2, P_j^2), ...(Q_j^n, P_j^n)\}$.[9] Each party selects one

[9]The assumption that each party's list is equally long is essentially without loss of generality because some of

candidate per jurisdiction. We assume political competition is independent across jurisdictions, and, therefore, in defining the equilibrium we focus on the single jurisdiction case. This is probably best interpreted as a situation where voters have a very strong preference for local candidates (say because they know more about them). Hence each party has a jurisdiction-specific candidate list.

We assume that parties are strictly ordered in terms of parochialism. For party R, P is always positive with a minimum $\underline{P} > 0$. For party L, the pro-majority party, P is always negative with a maximum $\underline{P} < 0$.[10]

For interpreting our results, it is useful to keep in mind a measure of welfare (though since nothing in our data corresponds to a measure of welfare, we are unable to use these measures to evaluate our empirical results). One metric we could use is the sum of individual decision utilities, $Q + P \int \lambda dG(\lambda, \delta)$, but this is by no means obvious. For example what value should society put on the fact that certain representatives of the upper caste party, BJP, might be particular effective in finding ways to provoke/humiliate lower castes and non-Hindus, or that certain leaders of the low caste parties insult high caste bureaucrats in public? It is true that this can be a source of pleasure and pride for party supporters, but it is hard to imagine a reasonable social welfare measure that gives substantial positive weight to this part of their preferences.

A general measure that accommodates a range of possibilities would be $Q + \int S(\lambda P, \delta) dG(\lambda, \delta)$. A special case is where $\int S(\lambda P, \delta) dG(\lambda, \delta) = 0 \forall (P,\delta)$ – which is tantamount to saying that the parochialism creates no social value and social welfare is simply Q.

4.2 Equilibrium

The basic play of the voting game is as follows: Each party chooses a single candidate for election from its list and then voting occurs. With two party competition, sincere voting is a voter's best response. Each voter chooses the candidate who maximizes $Q + \lambda P$ for his particular λ. This determines party vote shares: v_L, v_R. We consider a first-past-the-post voting system so that the party with the higher vote share wins. Parties understand the game structure and choose

the candidates could be dominated by others.

[10] In our empirical analysis we interpret parties L and R as the low caste and non-low caste party respectively. In much of UP, the low-caste party is the pro-majority party, however in some jurisdictions the non-low caste parties represent the majority.

the candidate that maximizes vote share.[11] In case of a tie both parties have an equal chance of winning.

Figure 3 represents a voting equilibrium. The horizontal axis represents λ. The left and right extremes are λ_0 and λ_1 respectively, and the intermediate vertical represents the value 0. The asymmetry between λ_0 and λ_1 reflects the fact that low λ individuals constitute a majority. The vertical axis represents the expected utility associated with a candidate. This is a two-candidate equilibrium with each candidate represented by a straight line which gives, for each λ, the value they deliver to that voter. Everyone between A and B votes for Party L and everyone between B and C for Party R. Who wins depends on the λ distribution.

Claim 1 *The political competition game has a pure strategy equilibrium for any* $G(\lambda)$.

The proof is in the appendix. The basic intuition is straightforward. Holding Q constant, electoral incentives imply party R wants to choose the lowest possible P value and party L the highest possible P value. Hence parties' best response change in a well defined way – starting from a given $(P_L, P_R), P_L$ will go down along the sequence of best responses and P_R will go up. Since both are bounded the process must converge to a pure strategy equilibrium.

This is a very convenient result which removes the usual wrestling involved in ensuring that a voting equilibrium exists. Moreover, since it is a two-person zero sum game, the players must earn the same minmax payoff in all equilibria of the game (which gives us the equilibrium vote share). As long as both parties have a positive vote share, in a generic game, only one pair of strategies will give us the minmax payoff. Therefore the equilibrium strategies will also be unique. However, when one party's vote share is zero such that one party's candidate dominates over the entire span of $G(\lambda)$, there could be multiple choices for each party that give both parties the same vote shares even in a generic game.

Claim 2 *The equilibrium vote shares associated with inter-party competition in candidate selection are unique. In a generic games where both parties have a positive vote share, the equilibrium candidate choice is also unique.*

The next result tells us that the equilibrium choice of candidates is independent of the underlying distribution of preferences.

[11] We assume this even when they have no chance of winning since this is the only weakly undominated strategy.

Claim 3 *For fixed C_L and C_R and given generic payoffs, a change in the distribution of λ will not change parties' candidate choice as long as both candidates have a positive vote share under both distributions.*

Proof. Suppose Party L chooses the same candidate in both cases. Given this candidate Party R faces exactly the same choices in both cases: it wants to capture the voter with the lowest λ that it can get, given Party L's candidate. Therefore party R will choose the same candidate. The same outcome remains an equilibrium and, since the equilibrium is unique, this is the only equilibrium. ■

This is extremely convenient from the point of view of pinning down the comparative statics of the model, since we can take candidate choice as given and focus on how changing the parameters affects the vote shares of the candidates.

4.3 Some comparative statics

With the results from sub-section 4.2 in hand, we can focus on how changes in population characteristics affects the political equilibrium. Let λ_m be the median value of λ for some $G(\lambda)$. For any fixed P_L, P_R and Q_R; define $Q_L(P_R - P_L, Q_R, \lambda_m)$ to be the value of Q_L such that $Q_L + \lambda_m P_L = Q_R + \lambda_m P_R$. Clearly (Q_L, P_L) beats (Q_R, P_R) for any $Q_L > Q_L(P_R - P_L, Q_R, \lambda_m)$,. This is the winning quality threshold for Party L, and is increasing in Q_R. Moreover, since $\lambda_m < 0$, Q_L is decreasing in $P_R - P_L$ and since $P_R - P_L > 0$, Q_L is decreasing in λ_m.

We are interested in the effect of voter ethnicization, interpreted as an increase in the political distance between the majority and the minority groups.

Definition 1 *Voter ethnicization in a jurisdiction has increased when the distribution function of λ changes from $G(\lambda)$ to $\widetilde{G}(\lambda)$ such that $\widetilde{G}(\delta\lambda) = G(\lambda)$ for some $\delta > 1$.*

Ethnicization stretches the support of λ from $[\lambda_0, \lambda_1]$ to $[\delta\lambda_0\ ,\ \delta\lambda_1]$where $\delta > 1$. It also ensures that $\widetilde{G}(0) = G(0)$. That is, it causes those against pro-majority policies become even more so with the converse true for those in favor of anti-majority policies. Since the fraction of pro-majority voters is kept constant it is not a mean preserving spread.

How does voter ethnicization affect the median value of λ? Denote by λ_m the median value corresponding to G and by $\widetilde{\lambda}_m$ the median value associated with $\widetilde{G}$. Now by definition of the

median, the share of the population above the median, $G(0) - G(\lambda_m) + 1 - G(0) = \frac{1}{2}$ (recall that $\lambda_m < 0$). With ethnicization, the share of the population above the median becomes $\widetilde{G}(0) - \widetilde{G}(\lambda_m) + 1 - \widetilde{G}(0)$. But since $1 - \widetilde{G}(0) = 1 - G(0)$ and $\widetilde{G}(0) - \widetilde{G}(\lambda^*) = G(0) - G(\lambda^*/\delta) < G(0) - G(\lambda^*)$, $\widetilde{G}(0) - \widetilde{G}(\lambda_m) + 1 - \widetilde{G}(0) < G(0) - G(\lambda_m) + 1 - G(0) = \frac{1}{2}$. In other words λ_m is too far to the right to be the median under the new distribution. The new median, $\widetilde{\lambda}_m$, must be to the left of the old median: $\widetilde{\lambda}_m < \lambda_m$.

Since we have proved that the change in the distribution will not affect candidate choice, the only effect of voter ethnicization is through the fall in the median value of λ_m. As already observed, when λ_m goes down $Q_L(P_R - P_L, Q_R, \lambda_m)$ must also go down. In other words, the quality threshold that the party L candidate has to reach in order to win goes down. By exactly the same logic, the quality threshold the Party R candidate has to reach in order to win must go up.

Claim 4 *An increase in voter ethnicization lowers the quality threshold for Party L winners and raises it for Party R winners.*

Under the assumption that the actual list of candidates available to run for a particular party in any jurisdiction is a random draw from some larger set of notionally possible candidates, the lowering of the quality threshold increases the likelihood that Party L will have a candidate who is above the threshold. The probability of Party L winning, therefore, goes up. Moreover a direct consequence of the lowering of the threshold, is that the average quality of party L winners will go down.

The effect on the Party R candidates will be exactly the reverse. Party R candidates will be less likely to win, but conditional on winning they will be higher quality on average. To summarize

Proposition 1: *An increase in voter ethnicization leads to Party L winning more often and lowers the average quality of the Party L winners. By the same token the average quality of the Party R winner will go up.*

This ought to be entirely intuitive: increased voter ethnicization thins out the middle of the distribution, while expanding the extremes. Since the minority party has to capture the middle in order to win, this makes it harder for them to win and helps the majority party. The fact that it is easier for party L candidates to win almost mechanically lowers the quality of Party L winners and raises the quality of those from Party R who can still win.

Next let us examine the effect on the quality gap between the winner and the loser. Note that because Party L is the majority party, $Q_L(P_R - P_L, Q_R, \lambda_m) < Q_R$, i.e. Party L candidates face a lower quality threshold for winning, the quality gap between the winner and loser in any jurisdiction for every realization of $\{P_L, P_R, Q_R\}$ can be written as

$$\int_{\min\{Q_L\}}^{Q_L(P_R-P_L,Q_R,\lambda_m)} [Q_R - Q'_L] \Pr\{Q_L = Q'_L | P_L\} dQ'_L +$$
$$+ \int_{Q_L(P_R-P_L,Q_R,\lambda_m)}^{Q_R} [Q'_L - Q_R] \Pr\{Q_L = Q'_L | P_L\} dQ'_L +$$
$$\int_{Q_R}^{\max\{Q_L\}} [Q'_L - Q_R] \Pr\{Q_L = Q'_L | P_L\} dQ'_L$$

The first and third terms in this expression are non-negative, while the second term is non-positive. As noted above, an increase in voter ethnicization lowers λ_m, and therefore $Q_L(P_R - P_L, Q_R, \lambda_m)$ must go down. This reduces the first, positive, term in the above expression and increases (in absolute value) the second, negative term. Hence, relative to losers, the quality of winners falls.

Proposition 2: *Relative to the quality of the losers, the quality of the winners must, on average, fall when voter ethnicization increases.*

Once again the result ought to be obvious. We already observed that with increased voter ethnicization Party L candidates are more likely to win. We expect these candidates to have been, on average, worse even before the increase in voter ethnicization since they have the advantage of being backed by the majority group. Now they are more likely to win which lowers average winner quality. To make matters worse, the average quality of the Party L winners goes down when voter ethnicization goes up (this is a part of what Proposition 1 tells us).

Finally a fixed fraction of jurisdictions in UP are reserved for Scheduled Castes, such that only Scheduled Castes candidates can stand for election in these jurisdictions (Pande 2003). In our model this is naturally captured by the assumption that $P_R - P_L$ is small in these jurisdictions, since all the candidates share a relatively similar ethnic background. This would mean that $\frac{dQ_L(P_R-P_L,Q_R,\lambda_m)}{d\lambda_m} = P_R - P_L$ is small in these jurisdictions, with the implication that the fall in the quality of the winners, relative to the losers, associated with an increase in voter ethnicization will be smaller.

Proposition 3: *The fall in the quality of the winners, relative to that of the losers, associated*

with voter ethnicization will be smaller in reserved jurisdictions.

This is only slightly less obvious than the two preceding results. The logic is easiest to see if we imagine that both parties have the same P in these jurisdictions. In that case the parties would compete exclusively along the quality dimension and since everyone has identical preferences over quality, the rise in voter ethnicization will not affect the identity of the winner.

4.4 Three Party Case

The discussion in section 3 suggests that ethnic voting is not the only thing that increased after 1980: so did the number of competitive political parties. To examine how voter ethnicization affects politician quality when political competition is also affected, we now consider a three party generalization of our model. Specifically, we now include a third, centrist, party, denoted as party N, whose candidates have $P \in (\underline{P}, \overline{P})$. In Uttar Pradesh, the Congress party, could arguably be seen as such a party.

With three parties a pure strategy equilibrium may not exist. However if it exists, the fact that it is a zero-sum game tells us that the equilibrium must be generically unique.[12]

The most important difference is that, unlike the two party case, in the three party case increased voter ethnicization can actually alter parties' candidate choice. To see this consider the case where before the increase in ethnicization Party R had zero vote share – in other words, over the relevant range, the Party N candidate strictly dominates the best Party L candidate. In this situation, Party N's candidate must be its best response to just Party R's candidate.

Now suppose an increase in voter ethnicization makes a Party L candidate viable (i.e. eats into Party N vote share). Now Party N faces a trade-off: it can either retain its old candidate or choose a new one, that does better against Party L but worse against Party R. Not surprisingly, depending on available candidates and Party L's candidate choice, it may be optimal for party N to change its candidate. This, in turn, might induce Party R to change its candidate. In the Appendix we prove the following simple result:

Proposition 4: *Consider an increase in voter ethnicization in a three party model of political competition. Make the following assumptions about the equilibrium before the increase in ethnicization:*

[12] We assume sincere voting which is an equilibrium under the assumptions made, though no longer the unique equilibrium.

(i) *A pure strategy equilibrium existed.*

(ii) *The party associated with the majority group (Party L) had a vote share of zero (i.e. it was not competitive).*

(iii) *The party associated with the minority group (Party R) received some majority group votes (i.e. from voters with* $\lambda < 0$*).*

If the increase in ethnicization makes Party L competitive (in the sense of obtaining a positive vote share), and a pure strategy equilibrium continues to exist, then Party R and Party N candidates will either not change or will change to being more pro-majority (or less anti-majority) and lower quality

In other words, when voter ethnicization alters the number of competitive parties, the selection of candidates might change. Moreover, unlike the *electoral selection* effect that we have highlighted until now, this *candidate substitution* effect could potentially lower the quality of *both* the winner and the losers.

If an increase in voter ethnicization leads to a Party L candidate winning then the average quality of Party L winners must go down (since these Party L candidates were not competitive precisely because they were low quality). However, if a Party R candidate continues to win, then Proposition 4 tells us that it is no longer obvious that the quality will be higher than before. Nevertheless, relative to Party R winners, we still expect the quality of the Party L winners to decline faster and this is the main proposition we test.

Turning to the winner-loser quality gap, the fact that both the winner and loser quality might decline raises the possibility that ethnicization may not reduce this gap. In other words the candidate substitution effect weighs against our finding an effect on the winner-loser gap.

4.5 Empirical Implications

As described in the introduction, our empirical strategy is to compare politician quality over time within the same jurisdiction, based on the assumption of a substantial increase in voter ethnicization in UP between 1980 and 1996. The theory offers three testable propositions: First, majority party winners will worsen over time, while minority party winners will improve. In other words, party R winners will improve in jurisdictions where the median voter's ethnic preferences

favor party L but will worsen in jurisdictions that favor party R.[13] Second, the winner-loser gap in quality will become increasingly negative over time. And finally, the change over time in the winner-loser gap will be smaller in reserved jurisdictions. We now turn to testing these.

5 Data and Measurement Issues

The data used in this paper comes from multiple sources which we describe below.

5.1 Politician Survey

A. Sample

Our main measures of politician corruption are from a field survey in 102 UP jurisdictions which we conducted between July-November 2003.[14] We collected information on the economic and political characteristics of the politicians who either won or were the runner-up in these jurisdictions in the 1980 and 1996 election.

In each district we chose two politicians and two journalists as respondents for every election year. This was premised on the assumption that politicians and journalists know a lot about other politicians of their own era and was evidenced in their ability to answer detailed questions on the politicians. For a given election in a district we selected journalist respondents from the pool of prominent journalists who covered that election and politician respondents from the pool of politicians elected from non-sample jurisdictions in the district (the Data Appendix provides further details). Within a district, we asked each respondent about three randomly assigned candidates. Appendix Table 1 describes respondent characteristics - close to 90% of the respondents lived in the district about which they were questioned during the relevant election. Respondents for both the 1980 and 1996 sample had known the politicians for roughly the same

[13] This is true as long as the list is independently drawn at random from the same population in both periods. It is worth emphasizing that this "clean" prediction is from comparing jurisdictions with different numerically dominant groups. If we compare two jurisdictions where the same group dominates, but the extent of dominance varies, then an increase in ethnicization may not reduce winner quality by more where the group is more dominant – in a jurisdiction where the dominance is so strong that any Party L candidate will win, an increase in ethnicization will not affect the expected quality of the winner. On the other hand, of course, ethnicization has no effect if no group is dominant, so for small levels of dominance any further increase in a group's dominance will amplify the effect of voter ethnicization.

[14] We started with the 1991 UP districts and combined districts with below five jurisdictions which gave us a sample of 51 districts (a district is the administrative unit below the state and the average district has 7.5 jurisdictions). We randomly sample three jurisdictions per district, of which a randomly selected two enter the main sample and a third was used for substitution (jurisdiction boundaries have been constant since 1977).

number of years at the time of election, and roughly 20% of the respondents share the caste identity of the politician they are questioned about (the number is roughly the same for sharing party identity as well). All our regressions control for relevant respondent characteristics.

B. Corruption Measures

Table 3 describes the multiple correlates of political opportunism on which our survey collected information.

The most straightforward is the corruption rank of the politician. Each respondent was asked to rank politicians on a 1-10 corruption scale, where 10 is the most corrupt. On the same scale respondents also ranked three hypothetical politician vignettes, termed X, Y and Z. The three politicians are clearly distinguished in their corruption performance, with X the least, and Z the most, corrupt. We combined a respondent's ranking of actual and hypothetical politicians to construct an ordinal ranking – a politician gets a corruption rank of one if his corruption rank was below that for politician X, a rank of two if it equals that for politician X, three if it is between the rank of politician X and Y and so on (on the construction of such ordinal ranks see King, Murray, Salomon, and Tandon (2004)). An important advantage of an ordinal ranking is that it accounts for respondent specific biases in what constitutes corruption.

Our second set of measures are assessments of economic gain enjoyed by the politician after entering politics and his criminal activity. We use four measures of economic gain: use of political office for personal gain, significant improvement in economic position, starting or expanding business and/or contracting activity and obtaining licenses for petrol pump or ration-shops. We report the average effect for these four measures, where we equally weight the four measures and use Seemingly Unrelated regressions to compute the covariance matrix. [15]

C. Potential concerns

We are interested in whether, between 1980 and 1996, the quality of politicians who belong to the same party but are elected from jurisdictions with varying demographic composition changed differentially. While our analysis always accounts for time trends in economic outcomes, it is useful to discuss upfront how we will address concerns related to potential respondent bias and

[15] A similar measure is used by Kling, Liebman, and Katz (2007); as they have distinct treatment and control groups they normalize their variables using the control group mean and standard deviation.

our survey measures of corruption (which are unaccounted for by time trends).

First, differences in the respondent sample across years may affect our ability to interpret over time changes in these variables. Norms about what constitutes corruption or criminality may change over time; people also might have very different notions of what it means to have a made a lot of money. It is, therefore, reassuring that in Table 3 the average corruption rank for the three hypothetical politicians are almost identical in 1980 and 1996. Further, a regression of these corruption ranks on the interaction of our measure of jurisdiction demographics, LOshare, with year dummies suggests that there are no over time changes in norms which are correlated with jurisdiction demographics.

A related concern is that, despite our attempt to create a balanced sample of respondents, perhaps the composition of the respondent sample has over time shifted in different ways in different places. Different types of respondents may answer the same question in dissimilar ways. Examining multiple measures of corruption helps with this since the concern is probably less true of the more "bland" questions (like whether the politician's family started any new businesses) than questions on the corruption record of candidates. Throughout we use reports from multiple respondents for each politician (and cluster our standard errors by politician) and control for respondent characteristics. These include respondent age, college education, whether he shares the politician's party affiliation and caste, whether the politician is a friend or relative (self reported) and whether the respondent is a journalist.

Finally, for a subset of questions, and a random sample of respondents, we verified responses via a second survey in 2004 on petrol pump and school ownership and politician criminal records. We obtained addresses of petrol pumps and schools purportedly owned by politicians from the head of the district petrol association and the principal of district college and members of district teacher association respectively. We physically verified the existence and ownership of schools and petrol pumps which were supposedly owned by politicians. Finally, we verified criminal records for a random sample of 75 politicians sampled in 1996 from the Local Intelligence Unit cell of the district police. Appendix Table 2 shows a high match rate, especially when all respondents agree. We, therefore, always report two specifications - one which includes all reports (the all sample) and a second which includes a single observation for each politician (the agreed sample). In the second specification, the variable of interest (which is always a dummy variable) takes a positive value only if all respondents agree that the politician has engaged in

the activity being asked about and zero otherwise.

A related, but distinct, issue is the extent to which these measures correlate with actual corruption. For instance, if politicians' salaries have seen a significant increase over time, then honest politicians may have also become wealthier. This may well be compounded by the fact that the economy is changing and the honest but hard-working son of a politician benefits more from his father's connections today even when there is absolutely no abuse of power. This is a concern if the trend in such phenomena are correlated with jurisdiction demographics *and* party identity – for instance, if low caste politicians saw a relatively greater salary increase in jurisdictions where they form a population majority. In general, it is harder to imagine reasons for why trends in these variables will vary by party and jurisdiction demographics. We also expect this to be less of a problem with sharper questions like whether the politician was a criminal or associated with them and whether they used their influence to benefit their families.

Another alternative is that our markers of corruption reflect unobserved quality – for instance, a politician who uses political influence for personal gain may also be very good at using political office to bring his constituents material benefits. However, in our data we don't observe any correlation between politician misbehavior and whether the politician is known for development activities in his jurisdiction or public good provision. In our robustness checks we show that the increase in public goods between 1980 and 1996 is actually lower in jurisdictions where the elected legislator is pro-majority.

Finally, since our data is retrospective it provides a summary of a politician's life (or at least life up to now) rather than a measure of what was known about him at the time of the election. In fact, a part of what our data describes is the consequence of having been elected (and therefore having had the chance to take bribes). That said, since our main regressions compare across winners we do not expect the retrospective nature of our data to be a source of bias.

5.2 Demographic and Party data

We measure a jurisdiction's demographic make-up by its share of low caste population: LOshare. Data on the low caste population share was last collected in the 1931 census.[16] To account for population growth we scale the low caste population share by the 1991 Hindu population share

[16]We include as low castes the castes which are officially classified as scheduled castes, other backward castes and tribes defined as scheduled tribes.

(see Banerjee and Somanathan (2007) for more details on the caste data). The average UP jurisdiction is majority low caste, with a LOshare value of 57%. Low inter-district migration implies that LOshare and current low caste population shares are highly positively correlated. Further, in our surveys we asked the respondents to identify the politically dominant groups in the jurisdiction. It turns out that the correlation between LOshare and political dominance by low castes as reported in our survey is over 80%.

As a proxy for the degree of voter ethnicization, we rely on the widely shared claim (also supported by our data on voting patterns) that ethnic identification in the voter population rose significantly between 1980 and 1996. While we lack a direct measure of people's preferences, Tables 1 and 2 provide strong evidence that ethnic, in this case caste-based, voting increased significantly over this period.

Finally, we use the nature of party campaigns, membership, and especially party leadership, to code the ethnic nature of political parties. By this metric two of the most important political parties in UP, the Congress and BJP, remain predominantly non-low caste.[17] Clearly, in the long run electoral pressures may cause parties' ethnic affiliation to reflect the population majority. However, the rise of low caste political movements is relatively recent. While these parties may seek to gain low and high caste votes, their inability to credibly commit to policies implies that they are more likely to be seen as representing high caste interests. We, therefore, code the Congress and BJP parties as non-low caste parties.

6 Results

6.1 Voter Ethnicization and Corruption

We start by using our survey data to examine how voter ethnicization between 1980 and 1996 affected politician quality within a jurisdiction. We use respondent r's report for winner i in jurisdiction j and year t to estimate:

[17] Our focus on the ethnic (caste) affiliation of the political party, rather than the candidate, is in keeping with the political science literature. Horowitz (1985) notes that "ethnically aware voters have understood that presenting a multiethnic slate is an exigency of political life, even for an ethnic party, and have accordingly voted for the ethnic party rather than for or against the ethnic identity of the individual candidates. When voters elect minority members of their ethnic party, it is wrong to regard this as non-ethnic voting. Quite the contrary: it is party and not candidate ethnic identification that counts."

$$Y_{irjt} = \alpha_j + \gamma_1 1996 + \gamma_2 LO_j \times 1996 + \gamma_3 P_i + \gamma_4 P_i \times 1996 + \gamma_5 P_i \times LO_j + \gamma_6 P_i \times LO_j \times 1996 + \gamma_7 X_r + \epsilon_{irjt}$$

P_i equals one if the politician belongs to a non-low caste party and LO is the low caste population share (LOshare). Jurisdiction and time fixed effects (α_j and γ_1) control for jurisdiction-specific and time varying determinants of politician quality respectively. We always provide results for the full sample of all respondent reports for politicians (the All sample). These regressions control for respondent characteristics (the vector X_r) and we cluster standard errors by politician. For quality measures which are dummy variables we report a second specification where we use a single quality measure for a politician. The dummy variable is positive only if all respondent reports agree and are positive; otherwise, we set the dummy variable to zero (the Agreed sample). This specification does not include respondent controls.

Our regressions exploit three sources of data variation: the winner's party identity, the demographic composition of the jurisdiction and voter ethnicization as proxied for by the time effect. Our focus on the dissimilar experiences of different parties across jurisdictions allows us to separately control for pure time effects (e.g. temporal shifts in norms about corruption, or the effects of economic development). However, time effects may vary by party: for example, the popularity of the certain parties may be rising and that of others may be waning. Within our model, this would tend to make the winners from the parties that are getting more powerful worse everywhere: The reverse would be true for parties that are becoming weaker. In our regressions we capture this effect by the interaction of the time effect and legislator party identity. Again, since our main prediction is about dissimilar time effects for different parties *in different jurisdictions* we can separately control for this interaction. Finally, since economic trends may vary across high and low LOshare jurisdictions and this affects the incidence of corruption, our regressions will control for the interaction of the time effect and LOshare.

The results are in Table 4. In Column 1 we see that, as measured by politician's ordinal corruption rank, pro-majority politicians in 1996 are more corrupt.[18] Specifically, the coefficient on $P_i \times LO_j \times 1996$ tells us that, relative to 1980, in 1996 a candidate from the non-low caste party who wins from a high LOshare jurisdiction has a significantly lower corruption rank. At

[18]Here, we only report results for the All sample. Since the rank is not a dummy variable it is unclear what should be the default rank when respondent reports do not agree.

the same time, the coefficient on $P_i \times 1996$ is positive, which, under the assumption of *no other party i specific time effect*, would suggest that a non-low caste candidate who wins from a low LOshare jurisdiction is significantly *more* corrupt. We observe a symmetric effect for the low caste party winners: Under the assumption that there is no separate time effect for high LOshare jurisdictions, our results tell us that a low caste party winner from a high LOshare jurisdiction is relatively more corrupt in 1996 (see the coefficients on $LO_j \times 1996$). Finally and perhaps most strikingly, the 1996 year dummy has a significant negative coefficient. In absence of any pure time effect, this coefficient picks up the change in corruption between 1980 and 1996 among low caste party winners in jurisdictions with zero LOshare. The fact that it is negative is notable, since the general perception is of an increasing trend in corruption, which would imply a positive pure time effect. It would suggest that the selection effect emphasized by our model was strong enough to swamp the time trend.

Columns (2) and (3) show an identical pattern for economic gain by politicians – winners whose party affiliation is pro-majority in the jurisdiction are more likely to have economically gained from being in politics in 1996 while winners' from the less pro-majority party are less likely. The 1996 dummy remains significant and resolutely negative. The results are very similar for the All and Agreed samples (the latter codes a politician as having benefitted from politics only if all respondents agree). In Appendix Table 3 we consider each separate measure of economic gain and observe a similar pattern for all measures, except ownership of petrol pumps or ration shops. This is relatively unsurprising: the propensity of politicians to own petrol pumps was unchanged over this period, suggesting that few new pump permits got issued over this period.

Columns (4) and (5) consider politician criminality. Overall, we find significant evidence that voter ethnicization increased the likelihood that the politician had a criminal record in jurisdictions where the politician's party ethnic identity reflects that of a larger fraction of the population and less so in other jurisdictions.

6.2 Voter Ethnicization and the Winner-Loser Corruption Gap

Our model provides two predictions on how voter ethnicization will affect the quality difference between the winner and loser in a jurisdiction. First, relative to the loser, winner quality will decline. Second, the change in the winner-loser quality gap will be smaller in reserved jurisdictions where winners and losers, by virtue of sharing the same caste identity, are likely to

have more similar levels of parochialism (P). To examine these predictions we use data on the winner and runner up and estimate for politician i in jurisdiction j at time t:

$$Y_{irjt} = \alpha_{jt} + \gamma_1 W_{ijt} + \gamma_2 W_{ijt} \times 1996 + \gamma_3 W_{ijt} \times R_j + \gamma_4 W_{ijt} \times R_j \times 1996 + \gamma_5 X_r + \epsilon_{irjt}$$

W_{ijt} is a dummy which equals one if the politician won the election and R_j is a dummy which equals one if the jurisdiction was reserved for Scheduled Castes (between 1980 and 1996 the reservation status of jurisdictions remained fixed). Our regressions include jurisdiction*year fixed effects, α_{jt}. That is, we estimate the winner-loser gap within a jurisdiction in a given year. Since (unlike earlier regressions) we cannot include a party*year effect it is not possible to rule out the suggestion that the fact that low-caste parties win more, combined with the fact that low caste party candidates tend to be more corrupt, underlie our findings. However we take comfort in the fact that our previous set of results which were not subject to this criticism suggested a very clear symmetry between low caste party winners in predominantly low caste jurisdictions and high caste party winners in jurisdictions where high castes are dominant.

The results are presented in Table 5. In column (1) we observe a significant decline in winner quality, relative to losers, as measured by the corruption rank. This decline is completely absent in reserved jurisdictions. In columns (2) and (3) we observe very similar trends in our average measure of economic gain for both the All respondents, and the Agreed, sample. That is, relative to the runner-up in the jurisdiction, the winner's propensity to benefit economically increases. This effect is absent in reserved jurisdictions. The results for the individual measures of economic gain are reported in Panel B of Appendix Table 3, and show very similar patterns except for petrol pump and ration-shop ownership. Finally, columns (4)-(5) show an insignificant effect of voter ethnicization on the overall winner-loser gap in criminality (though, we do see a differential effect in reserved jurisdictions). One explanation relates to candidate substitution. If parties respond to voter ethnicization by substituting candidates, then as discussed in Section 4 the quality of all candidates may decline. The decline in loser quality is likely to be clearest for criminal activities which are readily engaged in even when outside office (and, indeed, most criminal records are acquired before entering politics).

6.3 Robustness checks

While our results fit well with our theory, it is important to discuss alternative interpretations of our findings. First, since our results rely perceptions of corruption one may worry that these are potentially biased in ways that favor dissimilar candidates in different jurisdictions. Media bias is one possibility: perhaps our respondents simply report what the media tells them, and the media is biased. If these perception biases are shared by the voters then we would learn something about what drives voting, but nothing about corruption on the ground, while if the biases are specific to our respondents, and voters actually decide based on other information, then our results would entirely meaningless.

However, for such a bias to generate our results the media must be biased against the party associated with the dominant group in each jurisdiction, which seems implausible.[19]Moreover, throughout this period both the national and state media were controlled by the upper castes, and if they were biased, it was against low caste parties everywhere.

We deliberately chose as respondents individuals who are highly involved in politics and therefore likely to have their own sources of information about corruption. We, therefore, do not expect them to simply mouth what they hear in the press. Moreover, since they were chosen to be in diverse in their political views we would not expect them to share the same biases. It is therefore plausible that at least when they all agree that a particular politician was corrupt, it reflect the undeniable nature of his corruption rather a shared bias against him. It is reassuring that our results are very similar for the All and Agreed sample.[20]

Another concern is that the perception of corruption may reflect other, more positive, aspects of the candidates. For example, people may assume that more visible candidates are more corrupt, simply because their name comes up in more places, and it is possible that the winners from the

[19]Our regressions always control for whether respondent and politician share the same caste and same party. Our results are robust to including time trends in these variables and allowing for differential effects for politicians and journalists.

[20]A different concern is that our survey provides measures of lifetime corruption which reflects both the politician's type and opportunities available. We, therefore, undertook a cross sectional analysis where we measured legislator quality by his criminal record before he was elected. We obtained the criminal records from the affidavits filed by the candidate as part of the paperwork required for standing for election (filing criminal record became mandatory only in 2004. We were, therefore, limited to a cross-sectional analysis). If the relative worsening of pro-majority legislators finally leads to the election of worse legislators per se, then we would expect to see the trend that we saw in the panel data to be reflected in a cross sectional analysis. We found that a non low caste party candidate who wins from a high LOshare jurisdiction was relatively less likely to have a criminal record with the converse true for low LOshare jurisdictions.

party representing the dominant group are more visible. For this to be a problem for us, this has to be more than a jurisdiction fixed effect: the gap between perception and reality must have gone up over time. However one cannot off-hand rule out this possibility. To check that this doesn't underlie our results, Table 6(a) considers an array of other measures of politician quality as reported by our respondents (for brevity we report results for the sample of all respondents, the results for the agreed sample are very similar). In Panel A we report the results for the winner sample, and in Panel B we examine the winner loser gap. Columns (1)-(3) consider measures which should be strongly correlated with visibility but do not necessarily have anything to do with corruption. These measures are whether the politician was known for development activities, whether he held a party or ministerial position, whether he was associated with setting up or expanding schools. The patterns we found for the corruption measures do not show up here. In columns (4)-(7) we consider more ambiguous measures of quality. Columns (4) and (5) ask whether the politician was associated with business groups or criminals. Interestingly, it appears that what changed between 1980 and 1996 was politicians' propensity to engage directly in business and criminal activities— not their association with these groups. Finally in columns (8)-(9) we ask whether the politician used his political influence to benefit his party and own social group. We see no trend in using political influence for party gain. This is consistent with the fact that where raising money for the party was concerned, respondents stated that there was little shame in doing this (you cannot run a party without money). Hence, we expect this measure to mix competence and standing in the community, with corruption.[21] In Panel A, column (9) we do find evidence that politicians who were elected from jurisdictions where their party did not represent the majority were significantly less likely to use political influence for their social group. This potentially reflects the increasingly polarized nature of politics over this period. However, the effect is absent in the corresponding winner-loser gap regression.

In Table 6b we turn to even more objective measures of politician performance - their ability to deliver public goods. It is often held that rent-seeking behavior and pork barrel politics go together, and so voters may be willing to vote for corrupt politicians because they benefit in terms of public good provision. We fail to find any support for the thesis. We consider three types of public goods – number of kilometers of road built, number of schools constructed and

[21] Respondents stated that the politicians whom they most admired and respected (such as Lal Bahadur Shastri and C.B. Gupta, from the 1960s and Rajiv Gandhi from the 1980s), did collect money for the party.

number of villages electrified. We also construct an average index of these three measures, which is estimated within a SUR framework. In Column (1) we consider this average index and find that jurisdictions where the candidates elected did not share the party affiliation of the dominant group (and were higher quality candidates according to our corruption measures) were also jurisdictions where public good provision increased by more between 1980 and 1996. The same trend is apparent for individual public good measures. We take this as strong evidence against the thesis that more corrupt candidates are better able to provide for their constituents.

Our results very strongly point towards the *selection* effect we identified, i.e. lower quality pro-majority candidates are more likely to win when voter ethnicization increases. However, in a more general setting, one may also expect candidate substitution where, in response to increased voter ethnicization, parties alter their candidate choice in the direction of increased parochialism. In Table 7 we examine candidate substitution. In column (1) we see that the non-low caste party, on average, was 24% less likely to field an OBC candidate in 1980 but this probability fell by over 15% points by 1996. Further, in column (2) we see that this increase was increasing in the low caste population share of the jurisdiction. In columns (3)-(4) we consider SC candidates. Here we find no evidence of candidate substitution, either over time or across in the case of SC candidates – it would appear this group continued to rely on political reservation for representation.

7 Discussion

These results are consistent with our hypothesis that ethnicization of voting behavior creates opportunities for corrupt politicians. The magnitude of the estimated effect is also substantial. For example, take the rank measure and consider how much more corrupt the winner from a low caste party in the average jurisdiction became between 1980 and 1996. The coefficients on the 1996 dummy is -3.46 and on $LOshare \times 1996$ is 6.49. Therefore, the increase in corruption of a low caste party winner in the jurisdiction with the average level of LOshare (0.57) is $-3.46 + (0.57)(6.49) = 0.43,$ i.e. close to zero. The coefficient on $LOshare \times 1996 \times nonlowcasteparty$ is -7.20 and that on $1996 \times nonlowcasteparty$ is 4.25. So the difference in the increase in corruption between 1980 and 1996 for high and low caste winners in the jurisdiction with the average level of LOshare is 4.25 + (0.6)(-7.2)= 0.06 In other words both the high caste and low caste winners in the jurisdiction with the average level of LOshare remained of similar quality, despite the fact

that corruption, on average, increased.

It is the jurisdictions with a more biased caste distribution which show a really substantial change in corruption. For example in the jurisdiction at the 90th percentile in the distribution of LOshare (LOshare= 0.71), the increase in corruption of a low caste party winner is $-3.46 + (0.71)(6.49) = 1.14$ while the decrease in the corruption of the high caste party winners, relative to the low caste party winners, is 4.26 + (0.71)(-7.21)= -0.85.

The results also make clear that it would misleading to blame the rise on corruption entirely on a general rise in peoples' tolerance for corruption. People clearly still see corruption as something undesirable: The non-low caste candidates, it is apparent from our results, had to show themselves to be remarkably uncorrupt in order to have a chance of winning in jurisdictions dominated by low castes and vice versa. Equally, the data provides no support for the view that corrupt politicians are also good at pork-barrel politics.

Finally the fact there is such a sharp trade-off between ethnic loyalties and quality, is a product of the fact that there are not enough good candidates who are also seen as credible representatives of some ethnic group. One might imagine however that this could change over time, as more and more good candidates invest in also being seen as a representative of a specific ethnic group, and competition among them drives out the corrupt candidates.

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8 Appendix

8.1 Proofs

Claim 1 *The political competition game has a pure strategy equilibrium for any $G(\lambda)$.*

Proof. Let (Q_L^1, P_L^1) be some Party L candidate and (Q_R^1, P_R^1) be the best response of party R to this candidate. Assume the expected utility curves associated with these two candidates intersect at λ_R^1.

Now let (Q_L^2, P_L^2) be the best response to (Q_R^1, P_R^1) and assume that they intersect at $\lambda_L^2 > \lambda_R^1$. Let (Q_R^2, P_R^2) be the best response to (Q_L^2, P_L^2) and assume they intersect at λ_R^2. Then by revealed preference,

$$Q_R^1 + \lambda_R^1 P_R^1 > Q_R^2 + \lambda_R^1 P_R^2$$

but

$$Q_R^2 + \lambda_L^2 P_R^2 > Q_R^1 + \lambda_L^2 P_R^1$$

$$\Rightarrow \lambda_R^1(P_R^1 - P_R^2) > \lambda_L^2(P_R^1 - P_R^2)$$

$\Rightarrow P_R^2 > P_R^1$ since $\lambda_L^2 > \lambda_R^1$.

Now let (Q_L^3, P_L^3) be the best response to (Q_R^2, P_R^2) and let them intersect at λ_L^2. Then by revealed preference,

$$Q_L^2 + \lambda_L^2 P_L^2 > Q_L^3 + \lambda_L^2 P_L^3$$

but

$$Q_L^3 + \lambda_R^2 P_L^3 > Q_L^2 + \lambda_R^2 P_L^2$$

$$\Rightarrow \lambda_L^2(P_L^2 - P_L^3) > \lambda_R^2(P_L^2 - P_L^3)$$

$\Rightarrow P_L^3 < P_L^2$ since $\lambda_L^2 > \lambda_R^2$.

Therefore as we repeat this process, now starting from (Q_L^3, P_L^3) and (Q_R^2, P_R^2), we will get P_L going down and P_R going up. Since they are both bounded the process must converge to a pure strategy equilibrium. ■

Proposition 4: *Consider an increase in voter ethnicization in a three party model of political competition. Make the following assumptions about the equilibrium before the increase in ethnicization:*

(i) *A pure strategy equilibrium existed.*

(ii) *The party associated with the majority group (Party L) had a vote share of zero (i.e. it was not competitive).*

(iii) *The party associated with the minority group (Party R) was getting some votes from the majority group (i.e. voters with* $\lambda < 0$*).*

If after the increase in ethnicization Party L becomes competitive in the sense of being able to achieve a positive vote share, and a pure strategy equilibrium continues to exist, then either Party R and Party N candidates will not change or if they change, it will be in the direction of being more pro-majority (or less anti-majority) and lower quality

Proof. Suppose the initial equilibrium was described by (Q_N, p_N) and (Q_R, p_R). After the increase in voter ethnicization creates a new equilibrium with candidates $(Q'_L, p'_L), (Q'_N, p'_N), (Q'_R, p'_R)$ in which all three candidates have a positive vote share. Suppose in the initial equilibrium λ_R^{11} is the voter who was indifferent between the two parties. In the new equilibrium λ_R^{22} is the one who is indifferent between parties R and N and λ_N^{22} is the one who is indifferent between parties N and L. Finally, let λ_R^{12} be the voter who is indifferent between (Q_R, p_R) and (Q'_N, p'_N) and λ_N^{12} is the one who is indifferent between (Q_N, p_N) and (Q'_L, p'_L)

Suppose $p_N < p'_N$. By revealed preference,

$$Q_N + \lambda_R^{11} p_N \geq Q'_N + \lambda_R^{11} p'_N$$

Since $p_N < p'_N$, $Q_N + \lambda p_N \geq Q'_N + \lambda p'_N$ for all $\lambda < \lambda_R^{11}$. Then it follows from the fact that $p'_L < p_N$, that $\lambda_N^{22} > \lambda_N^{12}$ (since both of these are to the left of λ_R^{11}, (Q_N, p_N) dominates (Q'_N, p'_N)). On the other hand (Q'_N, p'_N) got chosen in equilibrium 2. Therefore it must be the case that $\lambda_R^{22} > \lambda_R^{21}$.

Similarly, because $p_R > p'_N$, and at λ_R^{11},

$$Q_R + \lambda_R^{11} p_R = Q_N + \lambda_R^{11} p_N \leq Q'_N + \lambda_R^{11} p'_N,$$

λ_R^{12} (defined by $Q_R + \lambda_R^{12} p_R = Q'_N + \lambda_R^{12} p'_N$) must be no smaller than λ_R^{11}.
Finally because $\lambda_R^{22} > \lambda_R^{21}$ and $\lambda_R^{12} \leq \lambda_R^{11}$ and $p_N < p'_N$, it must be the case that $\lambda_R^{11} < \lambda_R^{21}$. Therefore $\lambda_R^{22} > \lambda_R^{12}$. Now at λ_R^{22},

$$Q_R + \lambda_R^{22} p'_R = Q'_N + \lambda_R^{22} p'_N$$

and at λ_R^{12},

$$Q_R + \lambda_R^{12} p_R = Q'_N + \lambda_R^{12} p'_N$$

Since $p_R > p'_N$,

$$Q_R + \lambda_R^{22} p_R < Q'_N + \lambda_R^{22} p'_N = Q_R + \lambda_R^{22} p'_R$$

But this contradicts the fact that party R chose (Q_R, p'_R) rather than (Q_R, p_R) in the second equilibrium since the latter clearly does better at λ_R^{22}.Therefore $p_N > p'_N$ (the case where the lines are parallel is uninteresting–one of the options will never be chosen).
To prove that $p_R > p'_R$, recall that at λ_1^{11},

$$Q_R + \lambda_R^{11} p_R = Q_N + \lambda_R^{11} p_N \geq Q'_N + \lambda_R^{11} p'_N.$$

Now because $p_R > p'_N$, λ_R^{12} (defined by $Q_R + \lambda_R^{12} p_R = Q'_N + \lambda_R^{12} p'_N$) must be no smaller than λ_N^{11}. Moreover, from revealed preference

$$\begin{aligned} Q_R + \lambda_N^{11} p_R &\leq Q_R + \lambda_1^{11} p'_R \\ Q_R + \lambda_R^{12} p_R &> Q_R + \lambda_R^{12} p'_R. \end{aligned}$$

Subtracting the second inequality from the first we get

$$(\lambda_R^{11} - \lambda_R^{12})(p_R - p'_R) \leq 0$$

It follows from the fact that $\lambda_R^{12} \leq \lambda_R^{11}$ that $p_R \geq p'_R$. Q.E.D. ■

8.2 Data Appendix

Respondent Selection for Survey To identify journalists as respondents we used newspaper circulation figures to select four state-level and two district-level newspapers in each district in the three election years. We then went to these districts and identified prominent journalists associated with these newspapers who are still alive. We then randomly selected two journalists as respondents. To identify politician respondents we divided still alive politicians into candidates from the electorally most successful party in that year, and others. For each year and jurisdiction, we randomly selected one politician from each of these groups as respondent. If all winners from either party grouping were dead, then we substituted the first runner up and so on.[22]

Caste data The last detailed caste enumeration was done by the British during the 1931 census. These data are available district-wise for each province under British rule and for semi-autonomous princely states. For jurisdictions from which national legislators are elected caste figures were obtained by weighing caste figures by area. We use data on Hindu castes that form more than 1% of the population of each state or province in 1931, and define LOshare as the fraction 1931 Hindu population that was OBC or Scheduled Caste or Tribe. We use the most current state-specific government lists to identify these groups.

[22]We substituted for 38 politicians, and no journalists. Six politicians were non-traceable and we were unable to get appointments with other 32 (either they refused, were in jail or politically too important to contact.

Table 1: Caste voting patterns in Uttar Pradesh, 1999 National election

	High Castes		Low Castes	
	Brahmins	Thakurs	Yadavs	Jatavs
% voting for				
Non-low caste party	77.90	70.00	9.80	15.30
Low caste party	7.40	4.50	66.60	73.30
Populaton share	10.00	7.00	15.00	18.00

Notes:

1. These data are from the CSDS election survey, 1999. We report the voting preferences for the two largest high and low castes.

Table 2: Jurisdiction Demographics and Non-low Caste Legislators: 1980 and 1996

	Low caste population (LOshare)	
	below 50%	above 50%
1980	0.72	0.80
	(0.09)	(0.04)
1996	0.69	0.39
	(0.09)	(0.05)

Notes:

1. The sample consists of the 102 jurisdictions covered by the politician survey. Th Table reports the fraction of jurisdictions in which a candidate of the non-low caste party was elected legislator.

2. Standard errors are reported in parentheses

Table 3: Descriptive Statistics on the Rise in Corruption

	1980	1996
I. Corruption Ranking: Rank on 1-10 corruption scale, where 1 is most honest		
Vignettes		
X: Used political position to benefit party, but not himself. His lifestyle reflected his honestly earned income.	2.82	3.00
	(1.43)	(1.57)
Y: Used political position to benefit party. In addition, used it to benefit family/members of own social group. His lifestyle was better than he could afford on his honestly earned income	5.92	5.94
	(1.66)	(1.64)
Z: Used political position to benefit party and family/members of own social group. He is known for taking money from business groups and is associated with criminals. His lifestyle far exceeds his honestly earned income	9.45	9.44
	(1.01)	(1.06)
Ordinal corruption rank (scale 1-7)	3.33	3.53
	(1.33)	(1.34)
II. Politician Quality Measures (each measure is a dummy variable=1 if positive response)		
A. Economic Gain		
Economic improvement: Own/family economic situation improved a lot after entering politics	0.30	0.40
	(0.45)	(0.49)
Business/Contracting: New/ expansion of business/contracting activity since entering politics	0.40	0.54
	(0.49)	(0.49)
Petrol pump/ration shop: New/ expansion of petrol pump or ration shop since entering politics	0.08	0.08
	(0.28)	(0.28)
Personal Influence: Used political influence for personal benefit	0.30	0.42
	(0.46)	(0.49)
B. Crime:		
Criminal record: Has a criminal record	0.08	0.16
	(0.26)	(0.36)
C. Other Measures		
Party Influence: Used political influence for benefit of party	0.19	0.27
	(0.39)	(0.44)
Social Influence: Used political influence for benefit of social group	0.17	0.22
	(0.38)	(0.42)
School/Hospital: New/expansion of school or hospital since entering politics	0.22	0.26
	(0.41)	(0.44)
Business Association: Is associated with Business	0.16	0.20
	(0.37)	(0.39)
Criminal Association: Is associated with Criminals	0.14	0.21
	(0.34)	(0.40)
Known for development: Is known for development activity in his jurisdiction	0.42	0.42
	(0.49)	(0.49)
Party position/minister: Held a party position or was minister	0.46	0.46
	(0.49)	(0.49)

1. Standard deviation in parentheses.

2. All variables are from the politician survey. We report averages for the sample of winners and losers.

Table 4:Voter Ethnicization and Politician Quality

	Ordinal corruption rank	Average economic gain		Criminal record	
	All	All	Agreed	All	Agreed
	(1)	(2)	(3)	(4)	(5)
Non-low caste party*	4.51	0.35	0.38	0.43	0.68
LOshare	(0.90)	(0.21)	(0.19)	(0.22)	(0.29)
Non-low caste party*	-7.20	-1.09	-0.69	-1.00	-1.06
LOshare*1996	(1.61)	(0.33)	(0.33)	(0.34)	(0.46)
Non-low caste party	-2.33	-0.09	-0.10	-0.18	-0.24
	(0.50)	(0.12)	(0.09)	(0.09)	(0.12)
Non-low caste party*	4.25	0.58	0.43	0.41	0.46
1996	(0.95)	(0.19)	(0.16)	(0.17)	(0.21)
LOshare*1996	6.49	0.98	0.91	0.63	0.92
	(1.22)	(0.23)	(0.25)	(0.28)	(0.38)
year=1996	-3.46	-0.42	-0.42	-0.21	-0.35
	(0.73)	(0.12)	(0.13)	(0.13)	(0.16)
N	655	664	233	626	220

Notes:

1. The All sample includes all respondent reports. The Agreed sample consists of a single report per politician, where the dependent variable=1 if all respondents agreed in their response (and gave a positive response). Otherwise it equals zero.

2. The dependent variables are defined in Table 3. The average economic gain is the equally weighted average of the four measures: (i) Economic improvement (ii) Business/contracting (iii) Petrol pump/ration shop and (iv) Used political influence for personal gain, where we use SUR estimation to obtain covariance. Separate regressions for each measure are reported in Appendix Table 3.

3. The non-low caste party is a dummy variable=1 if the politician belongs to Congress or BJP parties, and zero otherwise. Loshare is the fraction low caste population share in the jurisdiction and 1996 is a dummy=1 if the year is 1996.

4. The regressions include jurisdiction fixed effects. Standard errors in regressions for the All sample are clustered by politician,. The All sample regressions also include as respondent controls: respondent age and dummies for whether the respondent has a college degree, is a journalist, knows the politician as a friend or relative and whether the respondent and politician share the same (i) caste (ii) party affiliation.

Table 5: Voter Ethnicization and the Winner-Loser Corruption Gap

	Ordinal corruption rank	Average economic gain		Criminal record	
	All	All	Agreed	All	Agreed
	(1)	(2)	(3)	(4)	(5)
winner	-0.12	0.03	0.00	0.03	-0.01
	(0.09)	(0.02)	(0.02)	(0.02)	(0.01)
winner*1996	0.39	0.10	0.08	0.01	0.03
	(0.13)	(0.03)	(0.03)	(0.04)	(0.04)
winner*reserved	0.35	0.09	0.10	0.01	0.10
	(0.28)	(0.05)	(0.05)	(0.04)	(0.09)
winner*reserved*	-0.75	-0.31	-0.28	-0.04	-0.34
1996	(0.38)	(0.08)	(0.08)	(0.11)	(0.18)
N	1186	1210	431	1210	408

Notes

1. The All sample includes all respondent reports. The Agreed sample has a single report per politician, where the dependent variable=1 if all respondents gave a positive response. Otherwise it equals zero.

2. The dependent variables are defined in Table 3. The average economic gain is the equally weighted average of the four measures: (i)Economic improvement (ii)Business/contracting (iii) Petrol pump/ration shop and (iv)Used political influence for personal gain, where we use SUR estimation to obtain covariance. Separate regressions for each measure are reported in Appendix Table 3.

3. Winner is a dummy variable=1 if the politician won the election, and zero otherwise. Reserved is a dummy=1 if the jurisdiction is reserved for SC candidates and 1996 is a dummy=1 if the year is 1996.

4.The regressions include jurisdiction*year fixed effects. Standard errors for regressions using the All sample are clustered by politicians and include as respondent controls: respondent age and dummies for whether the respondent has a college degree, is a journalist, knows the politician as a friend or relative and whether the respondent and politician share the same (i) caste (ii) party affiliation.

Table 6a: Robustness Checks: Other Politician Outcomes

	Party position/ minister	Known for development	Built Schools/ Hospital	Associated with		Used political influence for	
				Business	Criminals	party	social group
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Voter Ethnicization and Winner Quality							
Non-low caste	-0.78	0.05	-0.16	-0.10	0.09	-0.56	0.38
party*LOshare	(0.42)	(0.30)	(0.26)	(0.28)	(0.23)	(0.28)	(0.29)
Non-low caste	0.98	-0.96	-0.04	-0.57	-0.51	0.16	-1.09
party*LOshare*1996	(0.69)	(0.53)	(0.42)	(0.64)	(0.41)	(0.50)	(0.40)
Non-low caste party	0.60	0.20	-0.01	0.00	-0.01	0.23	-0.38
	(0.25)	(0.18)	(0.12)	(0.16)	(0.11)	(0.15)	(0.17)
Non-low caste party	-0.58	0.24	0.06	0.32	0.20	0.03	0.83
*1996	(0.42)	(0.34)	(0.22)	(0.39)	(0.22)	(0.29)	(0.22)
LOshare*1996	-1.09	0.48	-0.05	0.63	0.53	0.16	1.14
	(0.56)	(0.40)	(0.35)	(0.56)	(0.33)	(0.37)	(0.33)
year=1996	0.72	-0.05	0.05	-0.38	-0.18	-0.13	-0.77
	(0.34)	(0.26)	(0.19)	(0.35)	(0.17)	(0.22)	(0.19)
N	647	638	664	589	625	608	625
Panel B: Voter Ethnicization and the Winner-Loser Corruption Gap							
winner	0.05	0.20	0.08	0.05	0.01	0.11	0.00
	(0.06)	(0.04)	(0.05)	(0.03)	(0.03)	(0.03)	(0.04)
winner*1996	0.14	0.04	0.08	0.02	0.07	0.05	0.05
	(0.07)	(0.06)	(0.06)	(0.05)	(0.05)	(0.05)	(0.05)
winner*reserved	0.44	-0.16	-0.01	-0.02	0.07	-0.14	0.05
	(0.11)	(0.09)	(0.12)	(0.04)	(0.05)	(0.07)	(0.07)
winner*reserved*	-0.58	0.21	-0.24	-0.08	-0.10	-0.02	0.07
1996	(0.17)	(0.15)	(0.17)	(0.10)	(0.10)	(0.11)	(0.10)
N	1181	1166	1210	1093	1131	1053	1090

Notes

1. The regressions use the All sample, i.e. all respondent reports on each politician. In Panel A regressions the sample is (reports on) winners, while in Panel B the sample consists of (reports on) winners and losers. Standard errors are clustered by politician.

2. All regressions include the respondent controls listed in notes to Table 4. Panel A regressions include jurisdiction fixed effects and Panel B regressions jurisdiction*year fixed effects.

Table 6b: Robustness Checks: Public Good Provision

	Average public good provision	Roads	Schools	Electrified villages
	(1)	(2)	(3)	(4)
Non-low caste	-1.56	-2.18	-1.55	-0.97
party*LOshare	(0.71)	(1.64)	(1.47)	(0.96)
Non-low caste	2.25	4.13	1.82	0.82
party*LOshare*1996	(1.25)	(2.67)	(2.76)	(1.61)
Non-low caste party	0.53	0.94	0.27	0.38
	(0.34)	(0.90)	(0.62)	(0.54)
Non-low caste party	-0.84	-2.01	-0.22	-0.31
*1996	(0.70)	(1.60)	(1.54)	(0.98)
LOshare*1996	-2.15	-2.64	-2.63	-1.19
	(1.05)	(2.02)	(2.73)	(1.07)
year=1996	1.65	2.38	1.03	1.55
	(0.58)	(1.17)	(1.53)	(0.65)
N	225	231	225	231

Notes

1. Standard errors are clustered by district. All regressions include jurisdiction fixed effects.

2. Roads refers to the total kilometers of roads constructed in the district and Schools to the total number of primary and secondary schools in the district. Electrified villages are the number of villages electrified in the district. For comparability we create and use a normalized measure for each public good (by subtracting the sample mean and dividing by sample standard deviation). Average public good provision is the equally weighted average of the three normalized public good measures, where we use SUR estimation to obtain covariance.

Table 7: Candidate Substitution

	Obc candidate		SC/ST candidate	
	(1)	(2)	(3)	(4)
Non-low caste party	-0.24	0.10	0.03	0.05
	(0.05)	(0.05)	(0.03)	(0.05)
Non-low caste party*	0.16	-0.07	0.01	0.03
1996	(0.07)	(0.07)	(0.03)	(0.10)
Non-low caste party*		-0.60		-0.05
LOshare		(0.15)		(0.10)
Non-low caste party		0.40		-0.03
LOshare*1996		(0.20)		(0.18)
LOshare*1996		0.00		0.08
		(0.15)		(0.13)
year=1996	0.00	0.00	0.02	-0.03
	(0.05)	(0.06)	(0.02)	(0.07)
N	432	432	432	432

Notes

1. The sample consists of the winner and runner-up in the jurisdiction in 1980 and 1996. Standard errors clustered by politician id reported in parentheses. All regressions include jurisdiction fixed effects.
2. OBC candidate is a dummy=1 if the candidate caste is obc. SC/ST candidate is a dummy=1 if candidate caste is SC/ST.

3. The non-low caste party is a dummy variable=1 if the politician belongs to Congress or BJP parties, and zero otherwise. LOshare is the fraction low caste population share in the jurisdiction and 1996 is a dummy=1 if the year is 1996.

Appendix Table 1 : Summary Statistics on Respondents

	1980	1996
A. Respondent Characteristics		
College educated	38.00	49.00
	(48.00)	(50.00)
Journalist	50.00	49.00
	(50.00)	(50.00)
Age at time of election	36.30	39.00
	(10.86)	(10.55)
Respondent was living in district	88.00	85.00
during election	(31.50)	(35.70)
B. Respondent connections with politician		
Number of years had known politician	4.37	5.60
at time of election	(8.41)	(6.77)
Respondent and politician belong to	18.70	16.00
the same party	(39.00)	(36.00)
Respondent and politician belong to	17.20	21.10
the same caste	(37.80)	(40.80)
Respondent is a friend/relative of the	9.80	5.50
politician	(29.60)	(22.80)
Number of respondents	205	206

Notes

1. Percentages are reported with standard deviations in parentheses.

Appendix Table 2: Comparison of Survey data with Objective verification

	1980	1996
Petrol Pump		
Matches	90.54	90.00
Matches when all respondents agree	97.00	94.00
Mismatches where survey respondents, but not verification, say politician has petrol pump	3.00	6.00
Mismatches where verification, but not survey, says politician has petrol pump	6.00	4.00
Number candidates compared	74	76
Schools		
Matches	66	67
Matches when all respondents agree	74	74
Mismatches where survey respondents, but not verification, say respondent has school	14	14
Mismatches where verification, but not survey, says politician has school	20	19
Number candidates compared	74	76
Criminal Cases		
Matches		79
Matches when all respondents agree		84
Mismatches where survey respondents, but not LIU, says criminal record		6
Mismatches where LIU, but not survey, says criminal record		15
Number candidates compared		74

Notes

1. All match variables are in percentage

Appendix Table 3: Polarization and Politician Quality

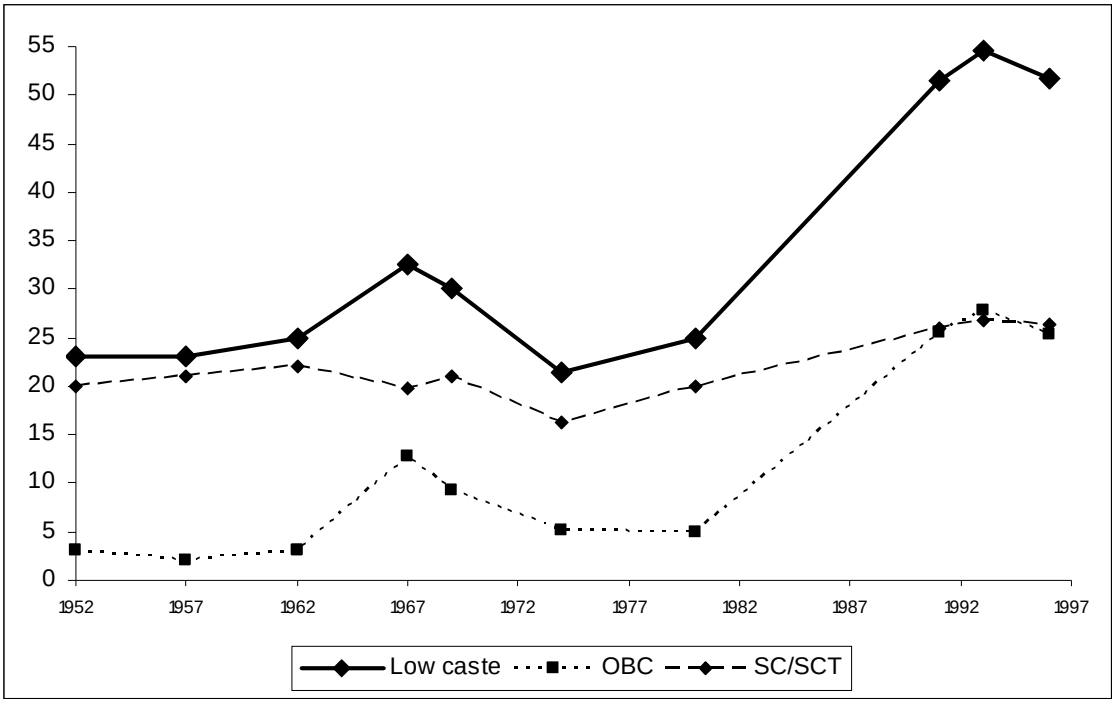
	Used political influence for personal gain		Economic Improvement		Business/ Contracting		Petrol pump/ration shop	
	All	Agreed	All	Agreed	All	Agreed	All	Agreed
Panel A: Winners								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Non-low caste party*	0.72	0.45	-0.48	-0.31	2.01	1.40	0.18	-0.01
LOshare	(0.39)	(0.41)	(0.33)	(0.48)	(0.74)	(0.58)	(0.17)	(0.12)
Non-low caste party*	-1.47	-1.44	-1.04	0.02	0.99	-1.73	0.11	0.38
LOshare*1996	(0.65)	(0.86)	(0.53)	(0.83)	(0.36)	(0.88)	(0.29)	(0.22)
Non-low caste party	-0.38	-0.15	0.37	0.19	-1.99	-0.53	-0.04	0.06
	(0.22)	(0.20)	(0.18)	(0.25)	(0.55)	(0.36)	(0.09)	(0.06)
Non-low caste party	0.90	0.96	0.58	0.14	0.95	0.78	-0.09	-0.14
*1996	(0.36)	(0.45)	(0.30)	(0.42)	(0.34)	(0.53)	(0.16)	(0.09)
LOshare*1996	2.96	1.68	0.89	0.53	1.67	1.57	-0.02	-0.15
	(1.00)	(0.69)	(0.35)	(0.61)	(0.46)	(0.70)	(0.21)	(0.11)
year=1996	-0.65	-0.89	-0.41	-0.27	-0.66	-0.60	0.03	0.07
	(0.26)	(0.38)	(0.20)	(0.32)	(0.29)	(0.45)	(0.12)	(0.05)
N	630	221	664	234	664	234	664	237
Panel B: Winner and Loser								
winner	-0.02	-0.10	0.10	0.02	-0.09	0.02	0.10	0.04
	(0.04)	(0.05)	(0.03)	(0.05)	(0.10)	(0.06)	(0.03)	(0.03)
winner*1996	0.22	0.20	0.14	0.11	0.24	0.03	-0.06	-0.01
	(0.06)	(0.09)	(0.05)	(0.07)	(0.13)	(0.09)	(0.04)	(0.04)
winner*reserved	0.12	0.23	0.17	0.07	0.58	0.25	-0.20	-0.14
	(0.10)	(0.14)	(0.07)	(0.10)	(0.23)	(0.15)	(0.08)	(0.10)
winner*reserved*	-0.36	-0.42	-0.44	-0.20	-0.93	-0.47	-0.01	-0.06
1996	(0.14)	(0.24)	(0.11)	(0.12)	(0.39)	(0.24)	(0.13)	(0.15)
N	1111	392	1210	435	1210	435	1210	435

Notes:

1. Panel A regressions include the sample of (reports on) winners and Panel B regressions the sample of (reports on) winners and losers. The All sample includes all respondent reports for each politician, and in regressions with this sample we cluster standard errors by politician. The Agreed sample uses a single report for each politician where the dependent variable=1 only if all respondents agreed in their response (and gave a positive response). Otherwise it equals zero.

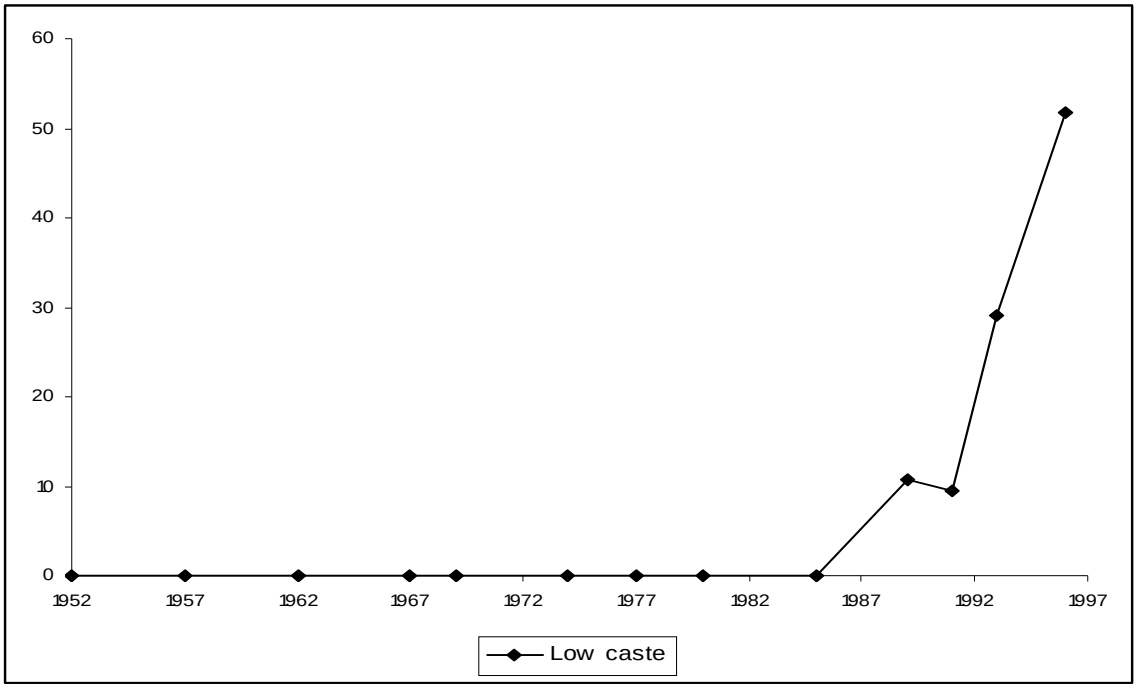
2. The All sample Regressions include the respondent controls listed in Table 4. Panel A regressions include jurisdiction fixed effects and Panel B regressions include jurisdiction*year fixed effects.

Figure 1: Low Caste Legislators in UP state legislature (%)



Notes: The low caste line graphs the fraction low caste legislators in the UP state legislature and the OBC and SC/ST lines show the fraction OBC and SC/ST legislators.

Figure 2: Vote share of Low-caste parties in UP State Assembly Elections



Notes: This graph reports the vote share of low caste parties in UP state elections between 1952-1997. The Samajwadi Party (SP) and Bahujan Samaj Party (BSP) are defined as low caste parties. Data is from the Election Commission of India.

Figure 3: Party Position and Voter Utility