

THE POWER OF POLITICAL VOICE: WOMEN'S POLITICAL REPRESENTATION AND CRIME IN INDIA

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Using state-level variation in the timing of political reforms, we find that an increase in female representation in local government induces a large and significant rise in documented crimes against women in India. Our evidence suggests that this increase is good news, driven primarily by greater reporting rather than greater incidence of such crimes. In contrast, we find no increase in crimes against men or gender-neutral crimes. We also examine the effectiveness of alternative forms of political representation: large scale membership of women in local councils affects crime against them more than their presence in higher level leadership positions. (JEL J16, P16, J15, J12)

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I. Introduction

One of the most fundamental aspects of civil society is the assurance of personal safety and fair treatment under the law for *all* citizens. However, protecting the rights of disadvantaged groups, such as population minorities and politically under-represented citizens, has remained a challenge in many countries. Individuals from such groups are often the target of a gamut of injustices, ranging from everyday indignities such as verbal abuse and discrimination to serious crimes including murder and even genocide. Concerned governments have considered a range of policies to prevent or redress such injustices, including welfare support, affirmative action quotas in education and jobs, legal protection and allocation of more law enforcement resources. Our paper is the first to examine the consequences of a very different policy reform on crime outcomes: greater political representation of disadvantaged groups in elected office.

Our paper makes three major contributions. First, we find strong and surprising evidence that political representation is an important means of providing voice to disadvantaged groups within the criminal justice system. The introduction of mandated political representation for women in India leads to a large and statistically significant increase in the documented number of crimes against women. We argue that this is good news for women's empowerment: considerable evidence suggests that this rise is primarily due to higher reporting, rather than an increase in the actual incidence of crime. Second, we shed light on the political architecture that maximizes female voice. It is the presence of women in the broad base of political representatives, rather than in leadership positions at higher levels of governance per se, that generates a more powerful impact on reporting of crimes. Finally, our work highlights the importance of reporting bias

in the analysis of crime statistics, an issue that has so far been explored mainly in a cross-country setting (Soares, 2004).

How could political representatives from disadvantaged groups affect their crime outcomes? For one, members of a minority group are likely to differ in their policy formulation and implementation preferences, since their life experiences would give them a different perspective on justice.¹ In turn, this could influence the functioning of the police or law enforcement agencies, which may become more responsive to the concerns of the disadvantaged groups. Second, the presence of minority group individuals in public office could alter the nature of interaction between the advantaged and disadvantaged groups, by changing perceptions or the degree of social bias against the latter.² Finally, observing members of their own group in positions of public office could change the attitudes and self-confidence of the disadvantaged group.³ In a broader sense, political representatives from disadvantaged groups could reduce injustice because they help to articulate the voice of their group members, as described by Hirschman (1970).

In practice, accurately measuring the impact of minority group elected officials on crime outcomes is difficult. A minority individual's election may reflect the changing preferences of the electorate, or the changing social status of

¹ As U.S. Supreme Court Justice Sonia Sotomayor observed, "...Our experiences as women or people of color affect our decisions...Hence, one must accept the proposition that a difference there will be by the presence of women or people of color on the bench. Personal experiences affect the facts that judges choose to see." (Sotomayor, 2002).

² For instance, in the U.S. context, the U.S. Kerner Commission (1968) endorsed the use of a mixed race police force as a tool to tackle law and order issues and inter-racial tensions. In India, Beaman et al (2009) demonstrate that the perceptions of women as leaders become more positive after men are exposed to women in leadership roles.

³ Jensen and Oster (2009) show that this role model effect is quite strong in India: exposure to strong women characters on cable television reduces women's reported tolerance for domestic violence and increases their decision-making authority in the household. Beaman et al (2012) find direct evidence that local female leaders in India raise the aspirations and educational attainment of girls (and their parents' aspirations for them), most likely through a role model effect. La Ferrara et al (2008) also show strong role model effects of television characters on Brazilian women.

previously disadvantaged groups, which may directly influence crimes committed against such groups.

In our paper, we are able to address this endogeneity issue by taking advantage of a unique, countrywide policy experiment in India. In 1993, a constitutional amendment made it mandatory for Indian states to set aside one-third of all positions in local government councils for women. The amendment also mandated reservation for other marginalized groups (lower castes and tribes) in proportion to their population ratio. It is one of the largest such experiments implemented in the political arena.⁴ Our analysis exploits the fact that the legislation, which significantly increased female representation in local leadership positions across India, was implemented at varying dates across Indian states. We can thus construct difference-in-difference estimates of the impact of political representation for women on crimes against them.

We find that the introduction of mandated political representation for women leads to a large and statistically significant increase in the number of documented crimes against women. Across all categories, documented crimes against women rose by 46%, while rapes increased by 23% and kidnapping of women showed a 13% increase. These results are robust to the inclusion of a host of controls for economic, demographic and political variables, the strength of the police force and state-specific time trends. We note that there is no significant effect on any categories of crime not specifically targeted against women (e.g. kidnapping of men, crimes against property or crimes against public order), suggesting that there is no overall deterioration in law and order conditions or policy changes other than the political representation that are driving our results. These findings are somewhat surprising, and potentially distressing.

⁴ A number of countries have mandated quotas for women's representation in national or subnational elected bodies (see <http://www.quotaproject.org> for details). Pande and Ford (2011) provide a comprehensive review of the effects of female leadership quotas on a range of outcomes.

We argue that this documented increase in crimes is in fact likely to be good news because it reflects improvements in reporting rather than a rise in actual crimes. Crimes where reporting biases are expected to be minimal, such as murders or suicides of women, show no significant increases after the introduction of women's political reservation. Most importantly, data from an individual crime victimization survey from Rajasthan state shows no significant difference in the incidence of crimes against women in villages where the council head position is reserved for a female leader and those that are unreserved. This also confirms that the rise in documented crimes does not reflect a backlash against women by those who resent greater female political power.

Three additional pieces of evidence are supportive of the reporting explanation. First, the Rajasthan survey shows that women express greater willingness to report crimes to the police in villages where the village council head position is reserved for women. Second, nationwide survey data on interactions with police shows both a higher degree of satisfaction and a lower likelihood of bribe payment by women when their village council is headed by a woman. Finally, we find evidence of greater police responsiveness to crimes against women after the reservation policy was implemented. The number of arrests increases significantly, both for overall crimes against women and specifically for kidnapping of women, with no decline in the quality of police effort. There is no such change in arrest rates for crimes not targeted towards women. Greater responsiveness of the police to crimes against women is likely to increase women's satisfaction with them and encourage greater reporting by women victims.

Finally, we address a related question: At what level of governance does political representation have a greater impact? We exploit a specific feature of the mandated representation system in India: in addition to village presidents, as well as village and district council member positions, one-third of district council

chairperson positions were also reserved for women, by rotation across districts. Using district-level crime data, we compare districts with and without women chairpersons to estimate the marginal effect of having a woman district chairperson, over the cumulative impact of all the lower level representatives mentioned earlier. We find that the bulk of the impact on crime comes from the latter set of women representatives, rather than female district chairpersons. Our results imply that the presence of women representatives at the lowest level of governance, where they have greatest proximity to potential crime victims, is more important in giving voice to women than their presence in higher-level leadership positions.

Our paper brings together two streams of literature in political economy, crime and development. Several recent papers have examined crimes against specific sections of society (including women), but none have examined the role of political power of minorities on crime outcomes against them.⁵ There is also an extensive literature on the socio-economic determinants of crime, ranging from local inequality and economic shocks to peer effects and family structure.⁶ A number of studies (Di Tella and Schargrodsky, 2004; Levitt, 1997; Draca, Machin and Witt, 2011) examine the impact of increased police hiring on crime . We are unaware of any studies that examine the effects of elected minority representatives on crime outcomes against them.

⁵ Miguel (2005) studies the effect of economic shocks on witch-killing; Sekhri and Storeygard (2010) looks at the effects of natural disasters on crimes against women; Donohue and Levitt (2001a) examine the link between the racial profile of police officers and the racial pattern of arrests. Stevenson and Wolfers (2006) study the impact of divorce laws on violence against women, Aizer and Dal Bo (2009) investigate the effect of prosecution no-drop policies on reporting of domestic violence, while Aizer (2010) examines the effect of women's relative wages. Iyengar (2009) examines the effect of mandatory arrest laws for domestic violence, and finds that it leads to greater under-reporting of less serious incidents, and consequently a rise in the number of homicides.

⁶ See, among others, Kelly (2000); Donohue and Levitt (2001b); Bloch and Rao (2002); Demombynes and Ozler (2005); Fafchamps and Minten (2006).

A second stream of literature has examined the effect of increased political representation for minority groups on policy making and attitudes.⁷ Many of the studies analyzing the Indian case compare outcomes across villages reserved for a female (or minority) council president and those that are not; i.e. they do not estimate the impact of increased representation among members of the village council but examine only the effect of the village council leader.⁸ Our study, in contrast, focuses precisely on the impact of the change in the composition of local councils by comparing crime rates before and after the implementation of reservation across Indian states. We are also able to assess the effects of the identity of council leaders at the *district* level.⁹

The rest of the paper proceeds as follows. Section 2 provides institutional details of the criminal justice system and mandated political representation in India, focusing specifically on the reasons for the variation in policy implementation dates across Indian states. Section 3 discusses the possible mechanisms through which political representation can affect crime incidence and reporting. Section 4 describes our data and empirical strategy, and Section 5 presents our main results. Section 6 presents evidence to support the view that the rise in documented crimes is primarily due to increases in reporting rather than an actual increase in crime incidence. Section 7 examines the effect of female leadership at the district and state level, and Section 8 concludes.

⁷ Most studies find significant positive effects of women or women-friendly leaders on female-oriented policies (Chattopadhyay and Duflo, 2004; Powley, 2007; Washington, 2008; Clots-Figueras, 2011), as well as improved attitudes towards women leaders (Beaman et al, 2009) and higher aspirations and educational attainment of girls (Beaman et al, 2012). Similarly increased representation of disadvantaged castes in political office has been found to bring greater benefits for these castes (Pande, 2003; Besley et al, 2007). A few recent studies, however, have challenged these findings (Rajaraman and Gupta, 2010; Bardhan et al, 2010; Dunning and Nilekani, 2010).

⁸ The empirical strategy of these studies, which relies on the cross-sectional variation in the reservation status of the council leader position, does not permit the estimation of the impact of increased representation among council members as one-third of member positions are reserved for women in all village councils.

⁹ Since village level crime data are not available, we are unable to examine the impact of having a female leader at the village council level.

II. Mandated Political Representation of Women in India

A. Women's Socio-Economic Status and Political Representation

Historically and even today, women remain a disadvantaged section of Indian society. Women were significantly under-represented in political institutions in India, accounting for only 10% of the membership of national legislatures in 2009. Over the period 1985-2007, only 5.5% of state legislators on average were women. Women were also significantly disadvantaged in terms of human development indicators. In 2007, India was ranked 114 out of 182 countries on the Gender Development Index of the UNDP and had only 940 women for every 1000 men in the 2011 census. Only 65% of women in India were literate in 2011, compared with 82% of men.

B. Mandated Political Representation in Local Councils

In April 1993, the 73rd Amendment to the Indian constitution came into force. This Act required each state to set up a three-tier system of local government, comprising village, intermediate and district level governance bodies, collectively known as the *Panchayati Raj*.^{10,11} All members of these local bodies were to be directly elected by the people every five years, and the Act provided for the establishment of State Election Commissions to conduct such elections. Twenty-nine areas of administration, including various local services such as water provision, sanitation and roads, were to be devolved to these local government bodies. State Finance Commissions were set up to provide

¹⁰ Certain small states were required to set up only two-tier systems of local government.

¹¹ The village-level governing bodies (Gram Panchayats) have been known to exist in India since ancient times. However, their real power, effectiveness and representativeness have varied considerably over time. Ghatak and Ghatak (2002) argue that prior to the 1990s, the *Panchayati Raj* was not generally effective: elections were not held, and the Panchayats did not assume any active role.

recommendations on revenue-sharing and making grants to these local government institutions. The Act thus provided for a considerable degree of political, administrative and (to a certain extent) fiscal decentralization to the local bodies.

Two further provisions were made to strengthen the representation of political minorities in these local bodies. At least one-third of all council seats at the village, intermediate (sub-district) or district level were required to be filled by women, and seats were also to be reserved for Scheduled Caste (SC) and Scheduled Tribe (ST) communities in proportion with their population in the village, sub-district or district level.¹² The positions of chairpersons of these local bodies were also to be reserved for women and members of the SCs and STs. The reservations would function by rotation, i.e. in each election cycle, one-third of the districts would have their chairperson position reserved for women, and another set of districts would have this reservation in the next election cycle. Similar provisions were made for urban local bodies as well.

All states amended existing laws or passed new laws to be compliant with the 73rd Amendment within one year.¹³ Elections were eventually held by all states, though there is considerable variation in the timing of elections across states.

Of the many components of the new law, the most salient effects on crime are likely to come from the change in the gender composition of local government councils. Law and order was *not* on the list of functions devolved to local governments. Fiscal decentralization has also not gone very far, with most local government revenue still coming from state government grants.

¹² The Scheduled Castes are communities that have historically been at the bottom of the Hindu caste hierarchy. Scheduled Tribes include communities traditionally outside the Hindu caste system.

¹³ The exceptions are Delhi, which has passed no *Panchayati Raj* legislation, and the small states of Nagaland, Mizoram and Meghalaya, which were not required to comply with this constitutional provision.

C. Variation in the Timing of Local Government Elections across States

Our main measure of political representation is an indicator for when women are given political representation in a particular state, i.e. in the indicator equals one in the years following the first local government election that implemented the “not less than one-third” reservation scheme for women representatives. As Table 1 shows, the date of this first election varies considerably across the major states of India.

[Insert Table 1 Here]

There are three main reasons for the variation in election timing across states. First, several states already had a system of local government even before the enactment of the 73rd Amendment. In many of these cases, the state government waited for the term of office of incumbent local officials to expire before conducting fresh elections in compliance with the 73rd Amendment. On the other hand, several states chose to incorporate the provisions regarding women’s representation into their own state laws even before the constitutional amendment came into effect. This was because they were aware of the impending legislation due to the long process of amending the Constitution,¹⁴ and had elections for local bodies scheduled as per their existing system. For instance, West Bengal made major amendments to their state-level legislation to provide reservation for women and SCs and STs in the 1993 election, once the passage of the constitutional amendment was imminent. Kerala made a similar change to its law

¹⁴ The 73rd Amendment Act was introduced in the national parliament in 1991, after two earlier failed attempts. After some debate, the bill was passed in December 1992. Thereafter, it needed to be ratified by a majority of the states, and finally came into effect in April 1993.

in 1991. Other states had unilaterally implemented reservation for women (Karnataka) or SCs and STs (Maharashtra and Madhya Pradesh) long before the constitutional amendment.¹⁵

A second reason for the differences in election timing is due to lawsuits challenging certain aspects of PR implementation. For instance, elections in Bihar were delayed due to a lawsuit challenging the proposed reservations for Other Backward Castes (OBCs) that had not been explicitly mandated by the constitutional amendment. These can be regarded as reasonably exogenous factors in causing the delay.

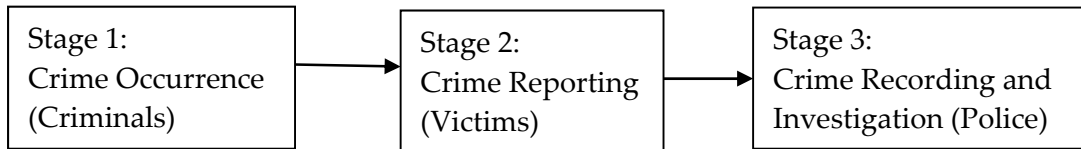
A third reason is potentially more endogenous: some states delayed the elections due to budgetary constraints or other unspecified reasons. Assam is one example of this. The state had elections in 1992, and therefore should have had its first PR-compliant elections in 1997, but the elections were conducted only in December 2001. The second round of elections was also delayed, taking place in December 2007, rather than in December 2006. However, our main results are robust to the exclusion of any specific state.

III. Potential Effects of Leader Identity on Crime Incidence and Reporting

We outline a framework similar to Donohue and Levitt (2001a) that considers the incentives of three parties relevant to a crime situation: criminals, victims and the police. First, a potential criminal decides whether to commit a crime or not. Next, when a crime occurs, the victim makes a decision on whether to report the crime to the police. Finally, the police must decide whether to record

¹⁵ State fixed effects, included in all our regressions, capture time invariant characteristics across states, such as the presence of a pre-scheduled local government election.

the crime, and how much time and effort to devote to investigating the crime and bringing the criminal to justice.



In what ways does increased female representation in local government affect the behavior of agents at each of these stages above? We examine this question working backwards, from stage 3 to stage 1, since changes in behavior of the police would influence behavior of victims and criminals in the earlier stages.

The presence of women leaders makes it more likely that police are responsive to crimes against women, i.e. that they record and investigate crimes against women more often in Stage 3 (the *recording* effect). The presence of female leaders at the local level might also induce the police to be more sympathetic towards female victims, either because their attitudes towards women undergo a change after observing female political leaders,¹⁶ or because these local leaders have the ability to highlight poor behaviour by the police to higher level officials, or to the local press.

As mentioned earlier, law and order is under the purview of state, not local governments in India. All higher level police officers belong to the explicitly non-political Indian Police Service (IPS). IPS officers are recruited on a nationwide basis through competitive exams, and are then assigned to specific states. They are thus neither elected nor political appointees, though state government politicians can have some influence on the assignment of specific officers to

¹⁶ See Beaman et al (2009) for evidence of improved attitudes towards women in places that experienced women local leaders.

particular positions (see Iyer and Mani, 2010, for an analysis of political influence on Indian bureaucrats). Since law and order was not devolved to the local government as part of the 73rd Amendment, local representatives at the district or village level have no direct power over police appointments or budgets. Nevertheless, they can lobby state level representatives and wield “soft power” in other ways, e.g. by threatening to publicize poor police response to crime victims. We examine the evidence on police responsiveness to crimes against women in detail in section 6.5.

If the police take women’s grievances more seriously, victims would be more encouraged to report crimes in stage 2 (the *reporting* effect). Further, the presence of female local leaders can directly affect crime reporting by women, independent of police responsiveness, through a “role-model” effect: Having more sympathetic women village councillors could give female victims greater self-confidence and a lower tolerance for being badly treated. We should note that most victims of physical or sexual violence do not come forward with their grievances: the National Family Health Survey of 2005-06 (NFHS-3) reports that 66% of women who experienced domestic violence did not tell anyone about such incidents.¹⁷

These effects of greater female representation in local government on the behavior of the police and victims would likely deter potential criminals from committing crimes in stage 1. This would lead to a decline in the actual number of crimes against women (the *deterrence* effect). However, greater political power for women may result in an increase in crimes against them for other reasons. For instance, if men are resentful of being mandated to elect women into leadership positions, they may commit more crimes against women – either as a way of

¹⁷ This question was not asked in previous rounds of the NFHS, hence we are unable to document whether the propensity to seek help for domestic violence changes over time.

simply expressing resentment, or as a calculated strategy to intimidate women leaders and voters (the *retaliation* effect).

Therefore, the overall effect of women's political representation on the number of documented crimes against women is ambiguous. If the deterrence effect is strong, we would see a decline in crimes against women following their greater political representation. On the other hand, if the recording and reporting or the retaliation effects outweigh the deterrence effect, we would actually see an increase in the total number of documented crimes against women. In the following sections, we first investigate the overall effects of political representation on crimes against women, and then shed light on the mechanisms at work.

IV. Data and Empirical Strategy

A. Crime Procedures in India

The Code of Criminal Procedure provides the basis for the criminal justice system in India. This code specifies that all information given to the police must be included in a written report by the police officer, read and signed by the informant. After this “First Information Report” (FIR) has been filed, the police are required to investigate the crime, and maintain detailed police diaries of the progress of the investigation. During such investigation, the police may question or arrest any suspects.

Under the *habeas corpus* requirements of Indian law, all arrested persons must be produced before a magistrate and charged with a specific crime within 24 hours or be released. The police must deliver to the magistrate a report which details the results of the investigation, and whether the accused has been arrested and/or released on bail. Based on this report, the magistrate makes a decision of whether there are sufficient grounds for proceeding against the accused. If he so

rules, a formal chargesheet is prepared, detailing the offence with which the accused is charged. If the magistrate feels that the police report does not provide sufficient grounds on which to frame a charge, the case is dismissed at that point. The fraction of cases in which the magistrate upholds the charges (the “chargesheeting rate”) therefore reflects in part the quality of the investigation carried out by the police. As discussed below, we will use the number of crimes reported (as captured by the FIR), the number of arrests made and the chargesheeting rate in the empirical analysis.

B. Data on Crime and Police Activity

We obtained data on the reported number of crimes at the district and state level from various issues of the “Crime in India” publications of the National Crime Records Bureau (NCRB) at the Ministry of Home Affairs, for the period 1985-2007. These data come from the first stage of the criminal justice system, namely the filing of FIRs with the police.¹⁸ We also have annual data on the number of arrests made for each crime category, as well as the chargesheeting rate.

Our main variable of interest is crimes against women. These include the following crime categories: rape, kidnapping of women and girls, dowry deaths, sexual harassment, molestation, cruelty by husbands or relatives, importation of women and girls, prostitution, pornography, giving and receiving dowry and *sati* (widow-burning). The reporting system for these crimes changes over time, as the NCRB started reporting additional crime categories separately. For instance, only rape and kidnapping of women were reported in the period before 1995, while

¹⁸ The Criminal Procedure Code of India divides all crimes into two categories: (i) cognizable – which are dealt by the Police, and in which a police officer may arrest a person with or without a warrant and (ii) non-cognizable – which are generally left to be pursued by the affected parties themselves in courts. Only cognizable crimes are reported in the NCRB publications.

other categories such as dowry death, molestation, sexual harassment and cruelty by husband or relatives started being recorded in 1995. Importation of women and girls was included in 2001. In all our regressions, we include year fixed effects to control for such nationwide changes in reporting. We analyze separately the specific crime categories of rape and kidnapping of women and girls, which are consistently reported over a longer time period. Detailed definitions of these crime categories are available in an online Appendix.

We also examine crimes against SCs and STs, which are recorded separately by the NCRB starting in 1992, and crimes which are not gender-specific, such as property crimes or crimes against public order. It is interesting to see that crimes against women follow a very different national trend compared to other violent crimes (Figure 1). The incidence of murders and riots shows a secular decline in the period after 1990, while the documented incidence of rapes has steadily increased.

[Insert Figure 1 Here]

Our data on the dates of the first local election with one-third representation of women comes from several different sources, summarized in Appendix 1.¹⁹ The empirical analysis uses many control variables at the state level. These include economic variables, such as state GDP levels, police strength, demographic variables (female-male ratio, literacy rates, urbanization), and political variables such as the presence of a female chief executive in the state.

¹⁹ In some cases, elections were held without implementing the provisions of the *Panchayati Raj* amendment fully. For instance, Uttar Pradesh had considerably less than 33% of women in local councils in the elections of 1995 and 2000. In a few cases where elections for village councils and district councils are held at different times, we have taken the reform date to be the date of district council elections. Our results are unchanged if we use the date for village council elections as the reform date.

We also examine survey data from several sources. The J-PAL Indian Crime survey conducted in the state of Rajasthan enables us to study the actual incidence of crimes against women and the willingness of women to report crimes to the police (Banerjee et al, 2011). We present evidence on the quality of interactions with police from the Public Affairs Centre’s Millennial Survey, an India-wide household survey which aims to assess the functioning of a range of public services in 2000.²⁰ We supplement this with data on citizen perceptions of the impact of local leaders on police behavior, based on household-level interviews from the State of the Nation Survey (Centre for the Study of Developing Societies, 2009).

C. Empirical strategy

We conduct the analysis for the 17 major states of India over the period 1985-2007.²¹ Table 2 provides the summary statistics for the crime data used in our analysis. To gauge the impact of political representation, we run state-level regressions of crimes rates (number of crimes per 1000 people) on our measure of political representation. Our base specification is the following:

$$(1) \quad \ln (C_{st}/P_{st}) = \alpha_s + \beta_t + fD_{st} + d'X_{st} + \varepsilon_{st}$$

²⁰ The Millennial Survey analysis was conducted while one of the authors was an intern with the Public Affairs Centre (a non-governmental organization) in spring 2003. For further description of the survey, see Beaman et al (2010).

²¹ The states included in the study are the large states of India, which account for 97% of the total population and 98% of total crimes reported: Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. Three new states—Chhattisgarh, Jharkhand and Uttarakhand—were carved out in 2001, from Madhya Pradesh, Bihar and Uttar Pradesh respectively. All our analysis is conducted by merging these newly created states with their original states, for the sake of comparability of sample units over time. All of these split states carried over the PR legislation from their parent states, but this aggregation can sometimes cause measurement error in our explanatory variable: for instance, Bihar conducted local elections in 2001 and 2006, but Jharkhand had not conducted a single PR election until 2007.

where C_{st} is the number of crimes in state s in year t , P_{st} is the population in state s and year t , α_s is a fixed effect for state s , β_t is a fixed effect for year t , D_{st} is a dummy variable that equals one in years including and following the first election with political representation for a given minority group in state s , and X_{st} is a set of state-time varying controls. The coefficient of interest, f , captures the effect of reservation for women on crime-related outcomes for women. All standard errors are clustered at the state level, to account for possible correlated shocks to state-level crimes over time.

[Insert Table 2 Here]

Our specification controls for a range of factors that the literature has identified as important determinants of crime rates: literacy rates, per capita incomes, male-female ratio and urbanization (Soares, 2004; Edlund et al, 2007). Further, we also control for whether the Chief Minister was a woman. This is to account for the possibility that we might mistakenly attribute the effect of a higher-level woman representative to a lower-level one. Finally, we also include measures of the size of the state police force as a control for varying levels of commitment to crime deterrence across states, though this might in fact be the channel through which political representation affects crime.

A further concern is that the timing of policy changes may be endogenous to the trends in crime. In addition to including state and time fixed effects, we also control for state-specific linear time trends.

V. Political Representation and Crime: Empirical Results

A. Crimes against Women

We find that political representation for women is associated with a large and significant increase in the documented crimes against women. Table 3 shows the coefficients on the post-reform dummy D_{st} , when we run specification (1) for a range of crime categories and with a variety of controls. The coefficient on the post-reform dummy is large, positive and statistically significant (column 1). The size and statistical significance of the estimated coefficients are little affected by the inclusion of a large number of demographic, economic and political controls (column 2), and controls for the strength of police in the state at that time (column 3). This suggests that the estimated effect is not due to a policy change in policing, but to the change in the identity of the politician.

[Insert Table 3 Here]

The results are practically unchanged when we control for female literacy rather than overall literacy (column 4). The inclusion of state-specific linear trends in addition to demographic, political and economic controls (columns 5 and 6) affects little the estimated effect of mandated representation for women, though the coefficients are somewhat smaller in magnitude. We should note that this specification controls for all linearly varying state-level variables, including any linear effect of representation of women (and therefore might be “over-controlling” for the effects of the reform). Our results are robust to the exclusion of any specific state.

In our preferred specification of column 3, the coefficient on D_{st} is 0.376 for overall crimes against women (per 1000 population), which corresponds to a 46% increase in reported crimes against women after the implementation of

political reservation. A large positive effect is also confirmed in specific types of crimes against women: the coefficient on the post-reform dummy is 0.206 for rapes and 0.125 for kidnapping of women, which works out to a 23% increase in rapes and a 13% increase in the kidnapping of women (estimates from column 3).

Figure 2 plots the coefficients obtained from a specification in which the post-reform dummy is replaced by a series of dummies for one to five or more years since the reform, along with a similar number of pre-reform dummies. There is a considerable increase in the number of documented crimes against women, starting at the date when women's reservation is implemented.

[Insert Figure 2 Here]

B. Crimes Against Men and Gender-Neutral Crimes

Could the increase in reported crimes against women be simply a part of an overall surge in crimes following mandated political representation for women? This could occur if the entry of inexperienced female policymakers led to a general decline in law and order or if political reservation were associated with other concurrent reforms such as changes to reporting rules, policing strategy or overall economic growth or inequality trends.²² We therefore examine the impact of political reservation on other various categories of crime where the victims are not necessarily women, such as the kidnapping of men and boys (reported separately from 1988 onwards), crimes against property (robberies and burglaries), crimes against public order (riots and arson) and economic crimes (counterfeiting, cheating and breach of trust). None of these crime categories show any statistically significant relationship with the implementation of women's political reservations (Table 4).

²² For the impact of overall economic growth or rising inequality on crime in India, see Prasad (2008) and Charmarbagwala and Sharma (2008).

[Insert Table 4 Here]

This makes us more confident that the results of Table 3 are indeed capturing the effect of women's political representation, rather than any other concurrent reforms that might have been implemented, or an overall increase in crime as a result of having less experienced female leaders.

The observed increase in documented crimes against women suggests that any deterrence effect is outweighed by other factors, at least in the short run. Is there a deterrence effect in the longer run? We ran a specification where we included the number of years since the reform and its squared term as regressors, rather than a single post-reform dummy. We find a significant negative coefficient on the squared term, suggesting that the rise in the documented number of crimes slows down over time. Our estimates suggest that the total number of crimes against women is expected to decline 9.5 years after the reform is passed (results available upon request).

Finally, we examine whether documented crimes against SCs and STs in local councils also increased after reservation was implemented. In addition to women, the *Panchayati Raj* policy provided for the mandated representation of these communities in local councils. Similar to the results for women, we find a significant increase in "identity crimes" against SCs after these groups obtain mandated representation in local councils (Table A1, columns 1-3). These refer to the crime categories under "prevention of atrocities" or "civil rights violations" which are crimes committed against SCs by upper castes, mainly on the basis of identity (e.g. discrimination, prohibiting access to public places).²³

²³ We do not find any significant results of political representation for STs on crimes committed against them (Table A1, columns 4-6). This is probably because of the inability of STs to mobilize as effectively as SCs. Other studies on STs have also found that mandated political representation

VI. Interpreting the Results: More Crime or More Documentation of Crime?

A. Crimes Where Reporting Bias is Likely to be Small

Given the challenge of separating out actual increases in crime from higher reporting/recording of crime, we begin by examining categories of crime where the incidence of underreporting is likely to be the least: murders and suicides of women (for the simple reason that it is relatively hard to hide a dead body). If the overall results in Table 3 were primarily driven by an increase in actual crimes committed, we may expect to find some effects in these crime categories as well.

We do not find any increase in overall murder rates after women's political reservation was implemented (Table 5, column 1). Focusing on murders of women, there is also no evidence of an increase following the surge in female representation in local governments. Since data on number of murders by gender are available only after 1999, we focus on the four states that enacted women's empowerment after 1999. Though the small sample size means that we are unlikely to get statistically significant results, it is nevertheless notable that the point estimate for the effects of female political representation is negative for murders of women, unlike for murders of men. (Table 5, columns 2-3).

[Insert Table 5 Here]

Data on motives of murders are available for our entire time period. We therefore examined data on murders where the motive was stated as love affairs or

for STs has not resulted in greater access to primary schools or other types of infrastructure (Krishnan, 2007; Banerjee and Somanathan, 2007).

sexual causes as a proxy for murders of women, on the plausible assumption that most victims of such murders are likely to be female. Again, we find no significant impact of women's reservation on the number of such murders or their share in overall murders (Table 5, columns 4-5). We also find no evidence of an increase in the incidence of female suicides following women's greater political role (Table 5, columns 6-7). Examining data on suicides also reassures us that the lack of any effect on murder rates does not arise from murders being misclassified as suicides. All these results are very similar when we include state-specific time trends (Table 5, Panel B).

Another category of crimes that may be less prone to reporting biases is crimes against children. Although the data are limited (available only for 1994 and later), the results suggest no significant increase in such crimes after women's reservation; in fact, crimes against children show a marginally significant decline after women are given political representation (results not shown).

B. Survey Evidence on Crimes against Women

The most compelling evidence that actual crimes against women did not rise after political empowerment comes from an individual crime victimization survey conducted in the state of Rajasthan. The survey was based on the United Nations Interregional Crime and Justice Research Institute's (UNICRI) International Crime and Victimization Survey, customized to the Indian context (Banerjee et al, 2011). In total, 5,895 households across 11 districts in Rajasthan were interviewed between the baseline and end-line surveys conducted in 2007 and 2008 respectively. We augmented the Rajasthan crime victimization survey data with information on the reservation status of the village councils (Gram

Panchayats) of survey respondents.²⁴ Since the Rajasthan survey was administered only after the implementation of the Panchayati Raj, we cannot estimate the impact of increase female presence among village council members, but only the effect of reservation for women of the village council head position.

We find no evidence for actual incidence of crimes against women to be higher in villages where the council head position is reserved for a female leader. Table 6 shows that women in women-reserved villages are not more likely to report being victims of a range of crimes, including molestation and eve-teasing (sexual harassment), over the previous 12 months. These findings provide strong support for our hypothesis that political representation is not associated with an increase in actual crimes against women. In particular, this means that there was no significant backlash against women in response to their greater political empowerment.

[Insert Table 6 Here]

A further piece of evidence against the retaliation effect is that we find little evidence of curtailment in women's freedoms in places with women leaders. A government survey of over 19,000 respondents across all states of India found very little difference across village units represented by women and men in the fraction of women requiring permission to go outside the home, to attend social events, to interact with strangers and to send girls to school (Government of India, 2008a, Table 7.14). For instance, 61.5% of women who are represented by

²⁴ We were able to match roughly 90 percent of the observations in the rural sample of the survey.

women councilors reported needing permission to go out of their homes; the corresponding figure for women in areas with male representatives was 60%.²⁵

C. Willingness to Report Crimes

Does political empowerment result in a greater willingness of women to report crimes? The Rajasthan crime survey included a public opinion survey, which asked the respondent about his/her willingness to report a hypothetical crime to the police and file a First Information Report (FIR). We find that women in villages where the village council head position is reserved are significantly more likely to say that they will report crimes to the police (Table 7). We do not find any such difference in the willingness of men to report crimes. This provides strong and direct evidence for the *reporting* channel.

[Insert Table 7 Here]

D. Women's Experience with Law Enforcement Officials

Even if women victims are willing to come forward and report crime, several previous studies have found the reluctance of police to record crimes against women to be a serious problem. Case studies report instances of the police characterizing an attempt to record a rape as a method to extort money, refusing to record domestic violence because “the husband has a right to beat the wife,” and assuming that a missing girl had eloped rather than been kidnapped

²⁵ We also examined an alternative hypothesis that greater participation in public life may be exposing them to more crimes. One source of such exposure could be women's labor force participation, which would increase their interaction with those outside the home. However, based on the National Sample Survey data we did not find any significant increase in women's labor force participation over 1987-88 to 2004-05.

(National Commission for Women, 2003). In a study using decoy crime victims, Banerjee et al (2011) find that only 50% of sexual harassment cases and 53% of domestic violence cases are registered by the police (when a male relative tries to report it on behalf of a female victim), in contrast to 92% of break-ins and more than 60% of motorcycle thefts.

These differences can also be observed when comparing data on recorded crimes with those reported in the India Human Development Survey 2005 (IHDS), which is the first crime victimization survey for India as a whole. For instance, 3.9% of households in the IHDS report a theft in the past 12 months, and 2.5% of households report being attacked or threatened (Desai et al, 2005). However, based on the National Crime Records Bureau (NCRB) data, only 0.12% of all households reported a theft in 2005, and only 0.2% of households report any violent crime.²⁶ Similarly, 12% of households in the IHDS reported that unmarried girls were “sometimes” or “often” harassed in their neighborhoods, compared to only 0.06% of households based on the NCRB data.

Given this backdrop, how do local leaders affect women’s experience with law enforcement officials? Data from the nationwide State of the Nation 2009 survey show that local leaders are widely perceived to change the degree of responsiveness of the police (Table 8, Panel A). First, the survey finds that nearly half the respondents identify their village council member or president as being the local influential person they would approach for help, if they had a problem to fix (columns 1 to 4). Second, the presence of a local influential person is believed to greatly increase the responsiveness of the police to citizen complaints: the perceived likelihood of the police listening sympathetically to a crime victim, and the likelihood of follow-up action increase by 10 percentage points (or 63 and 68

²⁶ These numbers are based on authors’ calculations from NCRB data, assuming an average household size of 5 members. Unfortunately the lack of any previous victimization survey prevents us from comparing trends in actual crime over time.

percent respectively) if the victim is accompanied by a local influential person (columns 5-8). A separate government survey of elected women representatives found that 62% of village-level women leaders had tried to reduce instances of domestic violence (Government of India, 2008a, Table 7.20).

[Insert Table 8 Here]

Data from the nationwide Millennial Survey show that women display greater satisfaction in their interactions with the police when they live in villages with a female council head (Table 8, panel B).²⁷ Women are slightly more likely to approach the police in such villages (columns 1 and 2). While the sample of respondents who actually had dealings with the police is relatively small, we do find that women in villages with female council heads were significantly more likely to say that the police solved their case (column 3) and significantly less likely to pay bribes to the police (column 7). They were also somewhat less likely to say that the police refused to register their complaint (column 5). We should note that the difference in women's responses across villages that did and did not have women council heads was larger than the difference for men in all these cases. These results are indicative of a positive change in police attitudes towards crimes against women, in the presence of women leaders. We find a similar result in the J-PAL crime survey from Rajasthan state: women are less likely to pay a bribe to file a police report in women-reserved villages (results available upon request).

²⁷ Since the Millennial Survey is a single cross-section, we cannot estimate the impact of increase female presence among village council members, but only the effect of reservation for women of the village council head position.

E. Political Representation and Police Action

The most direct evidence of police responsiveness comes from police action. We examine data on the number of arrests and chargesheeting rates to shed some light on this issue. Our data on police activity shows that the number of arrests per 1000 people for crimes against women increases by nearly 30% after women's reservation is implemented (Table 9, column 1). Arrests for kidnapping of women increase by a statistically significant 17% (columns 2-3). For crimes not targeted at women, and kidnapping of men, the impact is smaller and statistically insignificant when state-specific time trends are included (Table 9, Panel B, columns 4-5).

[Insert Table 9 Here]

Does this increased police arrest activity come at the cost of the quality of investigation? We examine the impact of political empowerment of women on chargesheeting rates i.e. the fraction of cases in which the police report about the crime is held up by a magistrate and results in a formal chargesheet against the accused. As shown in columns (6)-(7) of Table 9, political empowerment of women has no statistically significant effect on chargesheeting rates.²⁸ Hence, there is no evidence of a decline in the quality of police action with increased political representation of women either.

Further, in order to assess whether the authorities became more responsive to female victims, we also examined data on convictions over the period 1991-

²⁸ Chargesheeting rate for crimes against women is computed as the average of the chargesheeting rate for the following crime categories: rape, kidnapping of women and girls, dowry deaths, molestation, sexual harassment, cruelty by husbands or relatives and importation of girls. These rates are not separately available for other crime categories, hence we cannot report the chargesheeting rate for "all crimes other than those against women."

2007. Analysis of convictions is complicated by the prolonged delays in the Indian criminal justice system, which means that convictions recorded in a given year are likely to be based on arrests for crimes committed several years earlier. We find a positive association between women's political representation 3-5 years earlier and current conviction rates for crimes against women; there is no effect on crimes not targeted towards women (results available upon request).²⁹

We summarize our key results as follows: we do not find any indication that increased political representation of women is associated with an actual increase in crimes against them. On the other hand, several different pieces of evidence point to greater police responsiveness to crimes against women (the *recording* effect) and a greater willingness of women to report crimes (the *reporting* effect). There is also some evidence of a deterrence effect on crimes against women in the long run. Overall, these results imply that the observed rise in documented crimes against women (Table 3) is in fact good news: it represents a greater ability of women to get crimes recorded and is therefore an important first step towards obtaining justice. Political representation significantly improves the voice of women in the criminal justice system.

VII. Women's Political Representation: At What Level Does It Matter?

Beginning with Hirschman (1970), social scientists have recognized the importance of voice for the survival and success of any organization, be it a country or a firm. However, we know very little about the specific forms of representation that maximize effective voice. For instance, in our context, are the benefits to women maximized by being represented in more influential positions at higher levels of governance, or by large scale representation at the lower level?

²⁹ The conviction rate is computed as the ratio of the number of convictions to the number of crimes committed.

We are able to address this question by using the fact that, in addition to village presidents, as well as village and district council member positions, one-third of district council chairperson positions in India were also reserved for women, by rotation across districts. While all districts within a state have an identical (one-third) fraction of their council membership reserved for women, they do differ in whether the chairperson position is reserved for women. A priori, it is not obvious whether the impact of women district chairpersons will be larger or smaller than that of female district council members and sub-district level representatives. If district chairpersons have a greater degree of influence with local police, their impact on crime may be larger, while if the greater proximity of village level leaders to both the police and the victims is a major factor, then having a female district chairperson might not have much additional impact.³⁰

We collected data on the reservation status of the district chairperson in 10 out of our 17 major states.³¹ We run the following specification, similar to the state-level regression in (1):

$$(2) \quad \ln(C_{dt}/P_{dt}) = a_d + b_t + g\text{ChairPerson}_{dt} + d'X_{dt} + fD_{st} + e_{dt}$$

where the dependent variable is the number of crimes per capita in the district (in logs). The key independent variable is the dummy variable ChairPerson_{dt} which equals 1 if the district chairperson post in district d in year t is reserved for women, and zero otherwise. The specification includes district and time fixed effects, district level controls for female-male population ratios, literacy rates and urbanization, as well as a control for the timing of overall *Panchayati Raj* reform

³⁰ The district is the lowest level at which the NCRB reports crime statistics.

³¹ These states are Andhra Pradesh, Bihar, Gujarat, Haryana, Kerala, Maharashtra, Orissa, Punjab, Rajasthan and West Bengal. The data were obtained by contacting the State Election Commissions, the Ministry of Rural Development or the Ministry of *Panchayati Raj* of individual states.

implementation at the state level (D_{st}). All standard errors are clustered at the district level.

We find that, in any given year, having the district chairperson post reserved for women had a low marginal impact on crime outcomes, over and above the effects of state-level implementation of local council reservations. (Table 10, Panel A). Having a woman district chairperson increases documented crimes against women in the district by 1.9-4.6%; this estimate is statistically insignificant and considerably smaller in magnitude than the coefficient for implementing broad-based representation (0.173-0.253). This result is valuable because it shows that when it comes to giving voice (in this case, to female crime victims), political representatives who have greater proximity to those whose voice needs to be heard are more important than their presence in higher level leadership positions. It is also consistent with the previously reported evidence that it is the village level representative who is most commonly sought for help on important matters by villagers, over any other locally influential person including higher level political officials (Table 8, Panel A).

[Insert Table 10 Here]

Finally, we extend our analysis to consider the effects of having women members in the state legislative assembly (MLAs). We should note that women are significantly under-represented at these levels of government, where no mandated representation rules are in place. In our data set, only 5.5% of the state legislators in any given year are female. We run a regression specification similar to (1), except that the independent variable of interest is the fraction of female MLAs in power at the state level (Table 10, Panel B). Since this fraction is potentially endogenous, we instrument for the fraction of women MLAs using the fraction of closely contested elections (with winning margin less than 5%)

where the winner was female.³² We should note that the OLS and IV coefficients show a positive relationship between women's representation and reported crime, though none of these coefficients are statistically significant at the 5% level.

VII. Conclusions

This paper demonstrates that political voice is an important determinant of access to justice for socially disadvantaged groups. We provide one of the first systematic analyses of the effects of mandated political representation for women on crime outcomes against them, using data from the *Panchayati Raj* experiment in India. Furthermore, we shed light on the relative effectiveness of alternative forms of political representation for minority empowerment.

We find that having female political representation at the local government level induces strong positive and significant effects on the willingness and ability of women to get crimes against them recorded. It induces greater responsiveness of law enforcement officials to crimes against women, as measured by the number of arrests and the quality of women's interactions with police. Most of the effects are driven by the increase in broad-based representation of women in local government councils at the district and village level, rather than women in district leadership positions. We find a similar result for the case of SCs: despite already enjoying mandated representation at higher levels of government, we find that representation of SCs in local councils leads to increased reporting of crimes where the victims are specifically targeted because of their caste.

³² A similar instrument is used by Clots-Figueras (2011) in her analysis of the effects of women legislators on public goods outcomes.

Crime against disadvantaged minorities and under-reporting of such crime is a problem in both developing and developed countries. Encouraging victims to report such crimes is a crucial first step, both in understanding the magnitude of the problem, and in ensuring justice. Our work shows the key role that local leaders can play in facilitating this process. Our insights on the identity of local leaders in ensuring access to justice are likely equally valuable for other racial, religious or ethnic minorities.

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[Insert Table A1 Here]

Appendix 1: Data Sources

Crimes, arrests, chargesheeting rates, police strength: Annual issues of *Crime in India*, published by the National Crime Records Bureau, New Delhi.

Suicides: Annual issues of *Accidental Deaths and Suicides in India*, published by the National Crime Records Bureau, New Delhi.

Population, female-male ratio, literacy rates, urbanization: Census of India 1981, 1991, 2001. Values for intervening years by interpolation.

Real per capita GDP at state level: Central Statistical Organization, Ministry of Statistics and Programme Implementation, Government of India.

Dates of local elections: Institute of Social Sciences (1994, 2000); Government of India, 2008b.

Woman Chief Minister dummy: State government websites of respective states

Survey data from State of the Nation Wave VII, January 2009: State-level means obtained from Centre for the Study of Developing Societies, New Delhi.

Survey on interactions with the police: Millennial Survey conducted by the Public Affairs Centre, Bangalore, India.

Survey on willingness to report crimes and individual level crime victimization survey: J-PAL Indian Crime Survey (Banerjee et al, 2011).

Dummy for whether District Chairperson post is reserved for women: Obtained from State Election Commissions/Ministry of Panchayati Raj/Ministry of Rural Development for each state.

Presence of women in state legislatures: Election reports from Election Commission of India.

TABLE 1--DATES OF PANCHAYATI RAJ IMPLEMENTATION ACROSS STATES OF INDIA

Year of first election with reservation for women	Number of states
1987	1
1991	1
1992	2
1993	1
1994	2
1995	5
1996	1
2001	2
2002	1
2006	1
Total	17

TABLE 2--SUMMARY STATISTICS

	#obs	Mean	S.D.	Min	Max
<u>Panel A: Crime data</u>					
Total crimes against women per 1000 women (1985-2007)	391	0.173	0.137	0.001	0.570
Rapes per 1000 women (1985-2007)	391	0.031	0.020	0.001	0.102
Kidnapping of women and girls per 1000 women (1988-2007)	340	0.038	0.031	0.005	0.149
Kidnapping of men and boys per 1000 men (1988-2007)	340	0.010	0.008	0.000	0.045
Crimes against property per 1000 pop (1985-2007)	391	0.446	0.191	0.099	1.087
Crimes against public order per 1000 pop (1985-2007)	391	0.110	0.086	0.000	0.449
Economic crimes per 1000 pop (1985-2007)	391	0.059	0.033	0.019	0.200
Murders per 1000 pop (1985-2007)	391	0.035	0.018	0.011	0.150
Murders for love affairs or sexual causes per 1000 pop (1988-2007)	315	0.005	0.003	0.000	0.013
Suicides of women per 1000 women (1985-2007)	390	0.077	0.052	0.004	0.184
Suicides of men per 1000 men (1985-2007)	390	0.121	0.099	0.004	0.460
Atrocities against Scheduled Castes (SCs) per 1000 SC pop (1992-2007)	175	0.052	0.067	0.000	0.320
Civil rights violations of SC per 1000 SC pop (1992-2007)	175	0.008	0.013	0.000	0.080
Atrocities against Scheduled Tribes (STs) per 1000 ST pop (1992-2007)	145	0.021	0.044	0.000	0.279
Civil rights violations of ST per 1000 ST pop (1992-2007)	145	0.003	0.010	0.000	0.087
<u>Panel B: Police activity (1988-2007)</u>					
Arrests for crimes against women per 1000 pop	391	0.148	0.114	0.000	0.447
Arrests for rape per 1000 pop	340	0.020	0.012	0.004	0.062
Arrests for kidnapping of women per 1000 pop	340	0.020	0.016	0.000	0.101
Arrests for crimes other than those against women per 1000 pop	340	6.236	4.835	1.122	26.560
Arrests for kidnapping of men per 1000 pop	340	0.008	0.007	0.000	0.041
Chargesheeting rate for all crimes (1991-2007; %)	289	76.66	10.90	41.50	94.50
Chargesheeting rate for crimes against women (1991-2007; %)	289	89.60	7.75	60.50	98.30
<u>Panel C: Control variables (1985-2007)</u>					
Female-male ratio	391	0.937	0.045	0.859	1.070
Proportion of rural population	391	0.748	0.093	0.510	0.919
Proportion literate	391	0.513	0.121	0.273	0.811
Proportion with farming as main activity	391	0.178	0.054	0.021	0.294
Woman Chief Minister (dummy)	391	0.079	0.271	0.000	1.000
Police strength per 1000 population	391	1.541	0.885	0.084	5.923
Per capita state GDP ('000 rupees)	391	1.674	0.762	0.000	4.239

TABLE 3--WOMEN'S POLITICAL REPRESENTATION AND CRIMES AGAINST WOMEN

	Women's reservation implemented					
	No controls	Demographic, economic and political controls	Control for police strength	Control for female literacy	Control for state-specific time trends	Control for state-specific time trends + other controls
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Total crimes against women per 1000 women</i>	0.365 * [0.190]	0.365 ** [0.149]	0.376 ** [0.150]	0.375 ** [0.147]	0.225 ** [0.099]	0.229 ** [0.084]
R-squared	0.85	0.9	0.9	0.9	0.95	0.95
Observations	391	391	391	391	391	391
<i>Rapes per 1000 women</i>	0.201 ** [0.087]	0.199 ** [0.076]	0.206 ** [0.083]	0.203 ** [0.081]	0.147 * [0.072]	0.106 [0.078]
R-squared	0.81	0.83	0.83	0.84	0.91	0.92
Observations	391	391	391	391	391	391
<i>Kidnapping of women & girls per 1000 women</i>	0.160 ** [0.056]	0.133 ** [0.049]	0.125 ** [0.047]	0.125 ** [0.047]	0.135 ** [0.059]	0.115 ** [0.053]
R-squared	0.91	0.92	0.92	0.92	0.96	0.96
Observations	340	340	340	340	340	340
State and year fixed effects	Y	Y	Y	Y	Y	Y
Demographic & economic controls		Y	Y	Y		Y
Control for woman CM		Y	Y	Y		Y
Control for police strength			Y	Y		Y

Notes : All crime variables are in logs. Standard errors in brackets, corrected for clustering at state-level.

*, ** and *** indicate significant at 10%, 5% and 1% respectively.

Regression for 17 major states and years 1985-2007.

Each cell represents the coefficient on the post-reform dummy for the outcome variables with appropriate controls. Post-reform dummy equals 1 for years after the first local government elections with reservations for women.

Demographic & economic controls include literacy, urbanization, female-male ratio, % population in farming and real per capita state domestic product.

See Online Appendix for crime category definitions.

TABLE 4--WOMEN'S POLITICAL REPRESENTATION AND CRIMES NOT TARGETED AGAINST WOMEN

	Women's reservation implemented			
	No controls	Demographic, economic and political controls	Control for police strength	Control for state- specific time trends + other controls
	(1)	(2)	(3)	(4)
<i>Kidnapping of men & boys per 1000 men</i>	0.005 [0.135]	-0.003 [0.105]	-0.03 [0.113]	-0.134 [0.123]
R-squared	0.66	0.68	0.69	0.79
Observations	330	330	330	330
<i>Crimes against property per 1000 pop</i>	0.073 [0.073]	0.025 [0.051]	0.026 [0.050]	-0.034 [0.034]
R-squared	0.82	0.86	0.86	0.94
Observations	391	391	391	391
<i>Crimes against public order per 1000 pop</i>	0.193 ** [0.085]	0.124 [0.075]	0.116 [0.077]	0.086 [0.083]
R-squared	0.89	0.92	0.92	0.95
Observations	391	391	391	391
<i>Economic crimes per 1000 pop</i>	0.122 [0.075]	0.104 [0.062]	0.103 [0.062]	0.059 [0.052]
R-squared	0.7	0.71	0.71	0.86
Observations	391	391	391	391
State and year fixed effects	Y	Y	Y	Y
Demographic & economic controls		Y	Y	Y
Control for woman CM		Y	Y	Y
Control for police strength			Y	Y

Notes : All crime variables are in logs. Standard errors in brackets, corrected for clustering at state-level.

*, ** and *** indicate significant at 10%, 5% and 1% respectively.

Regression for 17 major states and years 1985-2007.

Each cell represents the coefficient on the post-reform dummy for the outcome variables with appropriate controls. Post-reform dummy equals 1 for years after the first local government elections with reservations for women.

Demographic & economic controls include literacy, urbanization, female-male ratio, % population in farming and real per capita state domestic product.

See Online Appendix for crime category definitions.

TABLE 5--WOMEN'S POLITICAL REPRESENTATION AND CRIMES WHERE REPORTING BIAS IS LIKELY TO BE LEAST

	Log (murders per 1000 population)	Log (murders of women per 1000 women)	Log (murders of men per 1000 men)	Log (murders due to love affairs or sexual affairs per 1000 women)	Share of murders attributed to love affairs or sexual causes	Log (suicides of women per 1000 women)	Log (suicides of men per 1000 men)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A. Without state-specific time trends							
<i>Women's Reservation Implemented</i>	-0.148	-0.068	0.195	0.089	0.01	0.055	0.069
	[0.105]	[0.175]	[0.125]	[0.089]	[0.008]	[0.070]	[0.054]
R-squared	0.76	0.78	0.81	0.89	0.81	0.96	0.97
Observations	391	32	32	315	320	390	390
Panel B. With state-specific time trends							
<i>Women's Reservation Implemented</i>	-0.128*			-0.049	0.003	0.06	0.068
	[0.062]			[0.098]	[0.006]	[0.073]	[0.063]
R-squared	0.87			0.91	0.88	0.97	0.97
Observations	391			315	320	390	390
State and year fixed effects	Y	Y	Y	Y	Y	Y	Y
Controls	Y			Y	Y	Y	Y

Notes: Regressions in (2) and (3) contain data from 1999-2007, and are restricted to the four states which implemented women's political reservations after 1999. All other columns include 17 major states and the period 1985-2007.

Standard errors in brackets, corrected for clustering at state-level.

*, ** and *** indicate significant at 10%, 5% and 1% respectively.

Each cell represents the coefficient on the post-reform dummy for the outcome variables with appropriate controls. Post-reform dummy equals 1 for years after the first local government elections with reservations for women.

Controls include literacy, urbanization, female-male ratio, % population in farming, real per capita state domestic product, dummy for whether the state had a woman Chief Minister and police strength per capita.

**TABLE 6--WOMEN'S POLITICAL REPRESENTATION AND CRIMES AGAINST WOMEN:
EVIDENCE FROM A VICTIMIZATION SURVEY**

	Dummy = 1 if female household member is the victim of :			
	Any crime	Molestation	Eve-teasing	Attack
	(1)	(2)	(3)	(4)
Panel A. Rural sample: Baseline and End-line survey				
<i>Village council head position reserved for women in 2005</i>	0.0019 [0.0013]	0.0001 [0.0002]	0.0006 [0.0004]	0.0006 [0.0006]
R-squared	0.0009	0.0001	0.0003	0.0005
Observations	25359	25359	25359	25359
Panel B. Rural sample: Baseline survey				
<i>Village council head position reserved for women in 2005</i>	0.0018 [0.0019]	-0.0001 [0.0001]	0.001 [0.0009]	0.0015 [0.0011]
R-squared	0.0016	0.0005	0.0024	0.0010
Observations	7953	7953	7953	7953
Panel C. Rural sample: End-line survey				
<i>Village council head position reserved for women in 2005</i>	0.002 [0.0015]	0.0002 [0.0002]	0.0005 [0.0005]	0.0003 [0.0007]
R-squared	0.0010	0.0003	0.0004	0.0006
Observations	17406	17406	17406	17406

Notes : Individual level responses from female respondents in the J-PAL Indian Crime Survey conducted in Rajasthan in 2007 and 2008.

Standard errors in brackets, clustered at the Gram Panchayat (village council) level.

All regressions control for district fixed effects and survey indicators.

*, ** and *** indicate significant at 10%, 5% and 1% respectively.

Any crime includes responses for the following crime categories: robbery/dacoity, theft, sexual assault/molestation, eve-teasing, hurt/grievous hurt, extortion, criminal force/assault, false accusations of crime, any other crime.

TABLE 7--WOMEN'S POLITICAL REPRESENTATION AND WILLINGNESS TO REPORT CRIMES

Dummy =1 if respondent says that s/he will definitely or probably file a First Information Report (FIR) for the following crimes:

	Normalized average		Eve-teasing		Stolen cell phone		Beaten up by someone	
	Female	Male	Female	Male	Female	Male	Female	Male
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A. Rural sample: Baseline and End-line survey								
<i>Village council head position reserved for women in 2005</i>	0.087 **	0.025	0.035	0.011	0.061 **	0.018	0.043 **	0.012
	[0.042]	[0.038]	[0.024]	[0.024]	[0.025]	[0.024]	[0.020]	[0.021]
R-squared	0.03	0.04	0.03	0.03	0.05	0.05	0.02	0.04
Observations	2304	2303	2304	2303	2302	2303	2304	2303
Panel B. Rural sample: Baseline survey								
<i>Village council head position reserved for women in 2005</i>	0.057	0.025	0.019	0.018	0.072 **	-0.02	0.029	0.035
	[0.062]	[0.057]	[0.033]	[0.040]	[0.033]	[0.034]	[0.026]	[0.023]
R-squared	0.04	0.05	0.01	0.02	0.05	0.02	0.03	0.04
Observations	790	688	790	688	790	688	790	688
Panel C. Rural sample: End-line survey								
<i>Village council head position reserved for women in 2005</i>	0.095 *	0.025	0.043	0.007	0.054	0.033	0.048 *	0.004
	[0.054]	[0.047]	[0.031]	[0.030]	[0.033]	[0.030]	[0.026]	[0.027]
R-squared	0.01	0.02	0.02	0.03	0.01	0.02	0.02	0.03
Observations	1514	1615	1514	1615	1512	1615	1514	1615

Notes : Individual level responses from the J-PAL Public Opinion Survey conducted in Rajasthan in 2007 and 2008.

All regressions control for district fixed effects and a survey indicator.

Standard errors in brackets, clustered at the Gram Panchayat (village council) level.

*, ** and *** indicate significant at 10%, 5% and 1% respectively.

Normalized average includes responses for the following crime categories: eve-teasing, stolen bicycle, stolen cell phone, beaten up by someone, stolen motorcycle/scooter

TABLE 8--HOW DO LOCAL LEADERS AFFECT INTERACTIONS WITH LAW ENFORCEMENT OFFICIALS?

Panel A. Perceptions of Local Leader Impact

	If you ever have difficulty in getting an important work done, whom will you first think of approaching for help?				In a case of theft, do you think the police will listen sympathetically		In a case of theft, do you think the police will take appropriate action	
	Village council member or president	Local politician	Government official	Others/Don't know	If victim goes alone	If victim goes with a local influential person	If victim goes alone	If victim goes with a local influential person
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Fraction responding "Yes"</i>	0.48	0.16	0.14	0.22	0.15	0.25	0.14	0.24

Notes : Data from the State of the Nation Survey, January 2009. Survey covers 14404 respondents from 17 major states.

"Others" in column (4) include state legislators, caste leaders, religious leaders and elders outside your family. Don't know responses coded as "no" for columns (5)-(8).

The difference between column (5) and (6) is statistically significant at the 1% level; similarly for the difference between columns (7) and (8).

Panel B. Women's Political Representation and Women's Interactions with Police

	Approached the police in last 5 years		Police acted efficiently and the case was solved		Police did not register the complaint		Paid Bribe to Police	
	Female	Male	Female	Male	Female	Male	Female	Male
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Village council head position reserved for women in 2000</i>	0.024 [0.023]	0.017 [0.013]	0.120 * [0.069]	-0.039 [0.026]	-0.023 [0.087]	0.07 [0.045]	-0.356 * [0.211]	0.006 [0.051]
Observations	1514	9282	132	900	132	900	49	433
R-squared	0.07	0.03	0.23	0.07	0.29	0.13	0.54	0.11

Notes : Individual level responses from the Millennial Survey, conducted in 2000.

Standard errors in brackets, clustered at the Gram Panchayat (village council) level. All regressions control for state fixed effects, village class dummies, and individual characteristics (religion, caste, education and occupation).

Columns (3)-(8) only for those who report having some interaction with the police.

*, ** and *** indicate significant at 10%, 5% and 1% respectively.

TABLE 9--WOMEN'S POLITICAL REPRESENTATION AND POLICE ACTIVITY

	Log (Arrests per 1000 population)					Chargesheeting rate	
	Crimes against women	Rape	Kidnapping of women	All crimes other than against women	Kidnapping of men	Crimes against women	All crimes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A. Without state-specific time trends							
<i>Women's Reservation Implemented</i>	0.296*	0.116	0.175 ***	0.251 *	-0.062	0.345	-0.216
	[0.153]	[0.076]	[0.060]	[0.120]	[0.109]	[0.979]	[1.864]
R-squared	0.88	0.85	0.87	0.78	0.73	0.83	0.87
Observations	340	340	323	340	312	289	289
Panel B. With state-specific time trends							
<i>Women's Reservation Implemented</i>	0.271 ***	0.092	0.148 **	0.095	-0.1	1.28	1.467
	[0.090]	[0.068]	[0.068]	[0.107]	[0.098]	[1.341]	[1.317]
R-squared	0.94	0.92	0.92	0.85	0.81	0.85	0.94
Observations	340	340	323	340	312	289	289
Demographic & economic controls	Y	Y	Y	Y	Y	Y	Y
Control for woman CM	Y	Y	Y	Y	Y	Y	Y
Control for police strength	Y	Y	Y	Y	Y	Y	Y

Notes : Chargesheeting rate is the percentage of arrests which are upheld by a magistrate (0-100).

All regressions include state and year fixed effects.

Standard errors in brackets, corrected for clustering at state-level.

Regression for 17 major states and years 1988-2007; chargesheeting data is from 1991-2007.

Demographic & economic controls include literacy, urbanization, female-male ratio, % population in farming and real per capita state domestic product.

Each cell represents the coefficient on the post-reform dummy for the outcome variables with appropriate controls.

Post-reform dummy equals 1 for years after the first local government elections with reservations for women.

*, ** and *** indicate significant at 10%, 5% and 1% respectively.

TABLE 10--THE EFFECT OF WOMEN'S POLITICAL REPRESENTATION AT HIGHER LEVELS OF OFFICE

Panel A. The Impact of Women District Chairpersons

	<i>Log (Crimes against women per 1000 women)</i>	
	(1)	(2)
District Chairperson reserved for women	0.046 [0.030]	0.019 [0.030]
Women's reservation implemented at state level	0.173** [0.068]	0.253*** [0.065]
R-squared	0.86	0.90
Observations	3943	3943
District and year FE	Y	Y
Demographic controls	Y	Y
Control for state-specific time trends		Y

Notes : Regressions are for 188 districts in 10 major states and years 1988-2007. Demographic controls include female literacy, urbanization and female-male ratio. Standard errors in brackets, clustered at district-level. *, ** and *** indicate significant at 10%, 5% and 1% respectively.

Panel B. The Impact of Women in State Legislatures

	Proportion of women legislators			
	OLS		IV	
	(1)	(2)	(3)	(4)
<i>Log (Crimes against women per 1000 women)</i>	2.809 [1.935]	0.766 [1.587]	5.049 * [2.859]	1.503 [2.507]
R-squared	0.89	0.95	0.89	0.95
Observations	391	391	391	391
<i>Log (Rapes per 1000 women)</i>	1.123 [1.215]	-0.725 [1.306]	0.93 [1.700]	-0.375 [2.136]
R-squared	0.83	0.92	0.83	0.92
Observations	391	391	391	391
<i>Log (Kidnapping of women & girls per 1000 women)</i>	1.199 [0.994]	-1.1 [0.910]	1.23 [1.982]	-0.394 [1.577]
R-squared	0.92	0.96	0.92	0.96
Observations	340	340	340	340
State & year FE	Y	Y	Y	Y
Demographic & economic controls	Y	Y	Y	Y
Control for woman CM & police strength	Y	Y	Y	Y
Control for state-specific time trends		Y		Y

Notes : Regressions are for 17 major states and years 1985-2007. Standard errors in brackets, clustered at the state-level. *, ** and *** indicate significant at 10%, 5% and 1% respectively. Demographic controls include female literacy, urbanization and female-male ratio; economic controls include % population in farming and real per capita state domestic product.

TABLE A1--SC/ST POLITICAL REPRESENTATION AND CRIMES AGAINST SC/ST

	Crimes against SC			Crimes against ST		
	No controls	Demographic, economic and political controls		No controls	Demographic, economic and political controls	
			Control for police strength			Control for police strength
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Total crimes against SC/ST per 1000 SC/ST pop</i>	0.066 [0.440]	0.377 [0.253]	0.402 * [0.213]	0.153 [0.307]	0.141 [0.333]	0.144 [0.332]
R-squared	0.81	0.86	0.87	0.53	0.61	0.61
Observations	168	168	168	134	134	134
<i>Murders of SC/ST per 1000 SC/ST pop</i>	0.209 [0.186]	0.262 [0.222]	0.306 [0.241]	0.625 [0.596]	0.573 [0.426]	0.583 [0.434]
R-squared	0.78	0.81	0.82	0.54	0.61	0.62
Observations	146	146	146	103	103	103
<i>Rapes of SC/ST per 1000 SC/ST pop</i>	0.148 [0.115]	0.141 [0.160]	0.141 [0.160]	0.004 [0.494]	-0.252 [0.447]	-0.237 [0.446]
R-squared	0.79	0.83	0.83	0.68	0.74	0.74
Observations	157	157	157	112	112	112
<i>Atrocities against SC/ST per 1000 SC/ST pop</i>	0.841 ** [0.328]	0.991 *** [0.310]	0.991 *** [0.313]	0.086 [0.365]	0.027 [0.565]	-0.02 [0.598]
R-squared	0.72	0.8	0.8	0.44	0.6	0.62
Observations	127	127	127	104	104	104
<i>Civil Rights violations per 1000 SC/ST pop</i>	1.134 ** [0.366]	1.420 *** [0.392]	1.410 ** [0.449]	0.037 [0.941]	0.235 [0.695]	0.183 [0.772]
R-squared	0.71	0.79	0.8	0.75	0.9	0.9
Observations	132	132	132	64	64	64
Demographic & economic controls		Y	Y		Y	Y
Control for woman CM		Y	Y		Y	Y
Control for police strength			Y			Y

Notes : All crime variables are in logs. All regressions include state and year fixed effects.

Standard errors in brackets, corrected for clustering at state-level.

Regression for 11 major states and years 1992-2007.

Demographic & economic controls include literacy, urbanization, female-male ratio, % population in farming and real per capita state domestic product.

*, ** and *** indicate significant at 10%, 5% and 1% respectively.

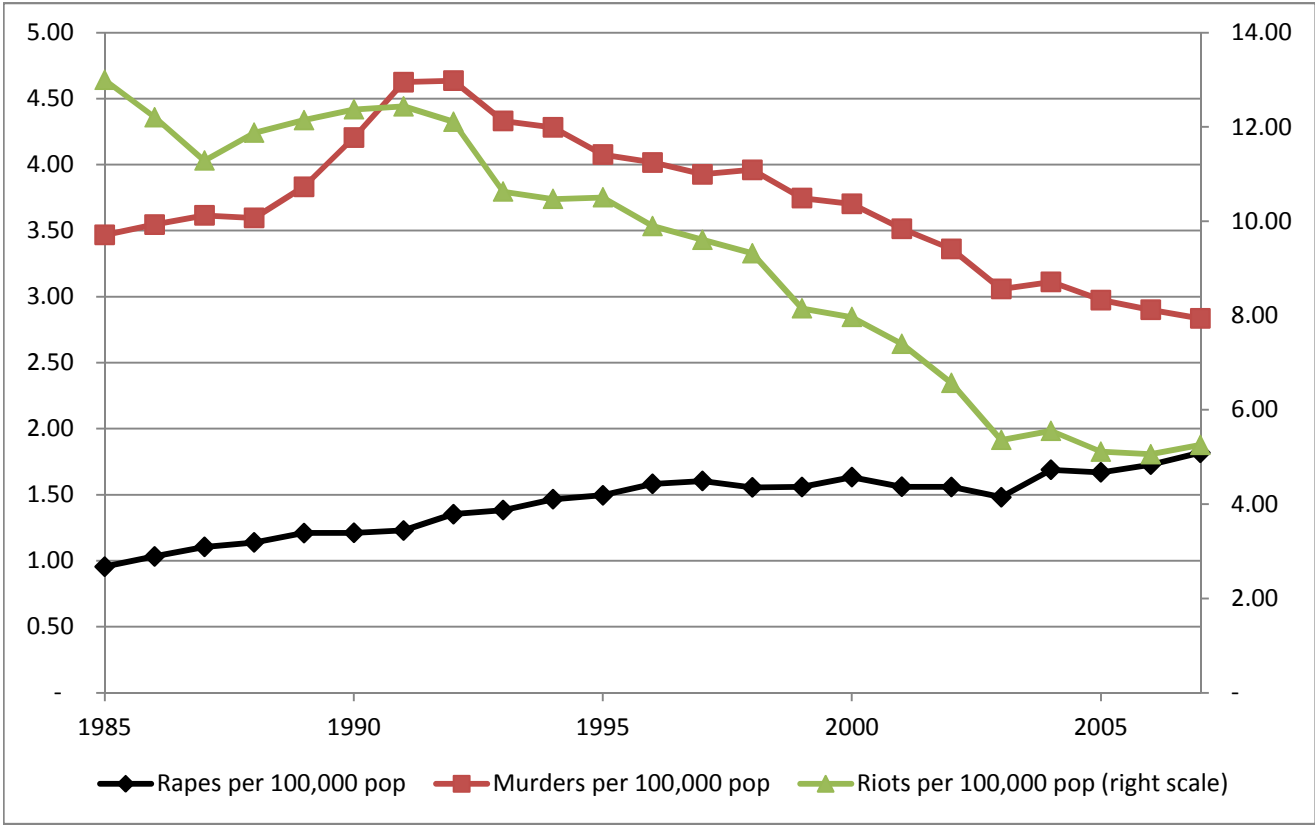


FIGURE 1--NATIONWIDE TRENDS IN SELECTED CRIME CATEGORIES

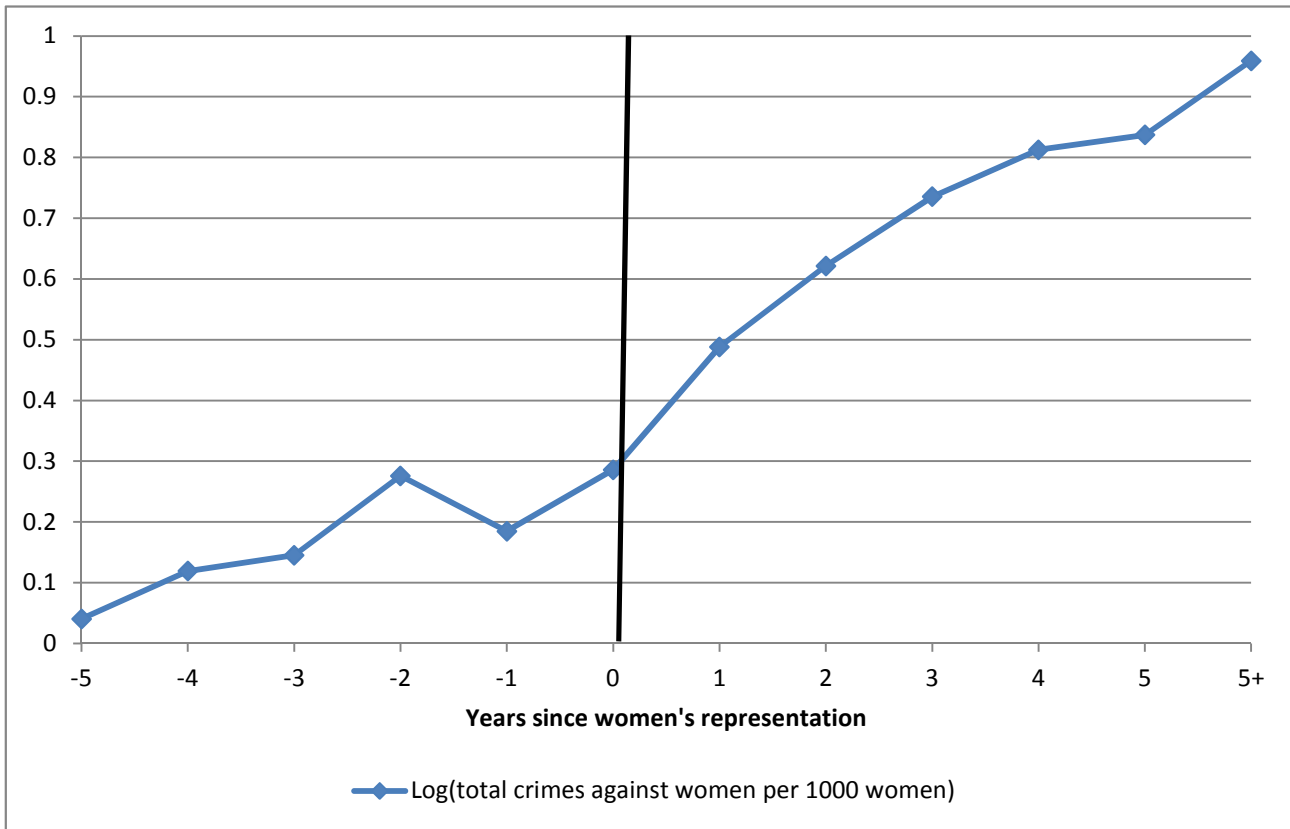


FIGURE 2--YEAR-BY-YEAR EFFECTS OF WOMEN'S EMPOWERMENT

Notes : Each point on the graph represents the impact of women's representation on total crimes against women after a given number of years. The zero point on the X-axis represents the year of the reform; the dates of reform vary across states as documented in Table 2.