The Timing of Elections and Infant Mortality: Evidence from India

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Abstract

This paper tests the impact of political cycles on developmental outcomes by studying the effect of the timing of state assembly elections on infant mortality in India. Using a large data set on children born between 1975 and 1998 from 14 major Indian states, I find that scheduled state assembly election years are associated with significantly lower infant mortality. The decline in infant mortality is higher in regions where the state ruling party or coalition had a narrow margin of victory in the previous election. The paper presents some evidence that the usage of medical services increase during election years. Mothers of children born just before elections have more regular antenatal check-ups. Children born 0-6 months before elections are also less likely to be of low birth weight.

1 Introduction

Politicians are concerned about winning elections and thus they adopt policies to maximize their chances of being elected. Such opportunistic behaviour on the part of politicians often results in the creation of favorable economic conditions before elections (Nordhaus (1975); Rogoff (1990); Alesina and Roubini (1992)). This can have large implications on the welfare of individuals in developing countries since the poor electorate in these countries is highly sensitive to economic fluctuations.

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In this paper I investigate the effect of the timing of state assembly elections in India on child health. I focus on child health, in particular infant mortality for the following reasons. Firstly, child health is an extremely important issue from the point of view of developing countries. According to Cutler, Deaton, and Lleras-Muney (2006) deaths in childhood comprises a significant percentage of all deaths in poor countries (30%) as compared to rich countries (less than 1%). Given that child health is an acute problem in poor countries, a politician may want to exert higher effort to improve health conditions before elections in order to secure more votes. Thus public health systems can function more efficiently during election years. Secondly, even if policy makers do not target public health directly, the existence of political cycles implies that overall economic conditions improve during election years and this can show up in child health. Various developmental schemes (like temporary employment generation schemes) might work more efficiently under pressure from the government which translates into higher family income and improved nutritional status leading to better health outcomes.

Existing literature has extensively studied opportunistic political cycles. Some studies have examined the impact of the election cycle on government policy; arguing that the government creates favorable economic conditions prior to elections using these policy instruments (Tufte (1980); Veiga and Veiga (2007)). Other studies have analyzed political cycles in macro level outcomes such as inflation, growth or employment (McCallum (1978); Alesina (1988)). However, very few studies have focused on whether the injection of public services before elections produces better social and economic individual level outcomes.

There is a small but emerging literature on political cycles in India (Cole (2009), Khemani (2004)). However, the analysis mostly focused on political cycles in government policy. In this paper, instead of looking at government policies, I investigate the effect of state elections on child heath which is often considered as an index of welfare in developing countries.

This study also contributes to the literature on the implications of economic conditions on child health. Previous research has found that political cycles create temporary economic booms. The results obtained in this paper show that temporary booms created by elections contribute positively towards child sur-

vival during infancy. In addition, there has been evidence of factors that jointly determine infant mortality and adult life outcomes. For example birth weight in the short run influences infant mortality while in the long run has significant impact on adult characteristics like height, IQ, earnings and education (Black, Devereux, and Salvanes (2007)).

India is a particularly relevant place to analyze the implications of election cycles. It is a developing country with high participation in democratic elections. The states in my sample have an average voter turnout of about 58%. Also, Indian state elections are not perfectly synchronized enabling me to identify the impact of elections separately from time invariant effects. The constitution of India requires states' elections to be held every five years. However, there have been midterm elections where elections were held before the completion of the full five year terms. These elections take place one, two, three and four years after the previous election. Since scheduled elections take place after the completion of full five year terms, the electoral calendar is exogenous and known perfectly in advance by all agents. Hence, opportunistic manipulation by politicians before elections is possible. On the other hand, midterm elections are more likely to be sudden and thus allow politicians much less time to manipulate policies. The identification strategy used in this paper rests upon comparing the mortality risks of siblings born before scheduled elections and those born in off-election years.

An advantage of this study compared to previous research is that this paper uses a significantly larger sample; more than 150,000 children spanning over 23 years and covering 91 elections, 58 of which are scheduled elections. Since the data has information on birth histories of mothers over time, I have been able include mother fixed effects in the estimations. Thus, the results here essentially compare across children born to the same mothers at different points of time (those born before scheduled election years and those not born before scheduled elections).

Using data from 14 major Indian states with some degree of political competition; that is states where an effective opposition party exists, I find that children born 0-12 months before scheduled state assembly elections have 13.4% lower mortality risks as compared to children not born before scheduled elec-

tions. The timing of midterm elections has no influence on infant mortality.

It can be argued that those children who are born just after scheduled elections have been exposed to improved prenatal care before elections. Thus these children should also experience some improvement in infant mortality. My results show that those children who are born 0-1 month after and 0-2 months after elections gains from their exposure to improved prenatal care. However children born after that do not experience any improvement in terms of infant mortality.

It has been emphasized in the literature that political cycles depend on the degree of political competition (Dahlberg and Johansson (2002), Cole (2009)). Thus, we expect the impact of the timing of scheduled elections on infant mortality to be higher in more politically competitive regions. My results provide evidence of such targeting and show that the effect of the timing of scheduled elections is higher for children born in close election districts[1].

Infant mortality is sensitive to a number of conditions at the time of birth such as environment, sanitation, access to clean water, prenatal and neonatal health services, calorie intake and diseases (Ross (2006)). Governments can influence health conditions though public health initiatives like reducing the absenteeism of doctors and nurses in government hospitals, encouraging parents to visit public health facilities more frequently, filtering drinking water supplies, building sanitation systems and draining swamps. Estimating the impact of election timing on the efficiency of the public health system (for example whether the election timing is synchronized with reduced absenteeism of public health workers) is a direct test of whether elections have a positive impact on government health policy. However, in the absence of data on these variables, I check whether there is improved health care utilization by mothers who gave birth before elections. In particular I test whether the mothers of children born just before elections had more regular antenatal check-ups and had at least one tetanus injection during pregnancy. The paper provides evidence that both of these things in fact occurred.

1. Close election districts are those districts where incumbents had a narrow margin of victory in the previous election. In India elections are held at constituency level. However, the data used for generating the infant mortality variable is observed only at the district level and not at the constituency level. A district is composed of a number of constituencies (9 on average) and so the election data has to be aggregated to the district level. Thus, the absolute margin is defined at the district level.

Government initiatives can also improve the nutritional status of children. This can be achieved by reducing leakages in the food security network, generating increased temporary employment opportunities via public works program (Schuknecht (1996)) or by providing direct monetary payments to voters (Akhmedov and Zhuravskaya (2004)) before elections. In order to test the impact of the timing of elections on the nutritional standards of children, I analyze the impact of timing of elections on the incidence of low birth weight.

The paper is divided into seven sections. The next section provides a brief review of the existing literature related to my work. Section 3 briefly outlines the institutional background. Section 4 describes the data used in this study. Section 5 outlines the empirical strategy and discusses the results. Section 5.1 outlines the main results on the impact of the timing of elections on infant mortality. In section 5.2, I have estimated the impact of the timing of scheduled elections on neonatal and 2-12 month mortality separately since in India most of the deaths during infancy occur in the first month of life. In sections 5.3 and 5.4, I have tried to identify the effect of the timing of elections on mortality risks of children born just before or after scheduled elections. Section 5.5 shows whether the impact of being born before scheduled elections is higher for electorally more competitive districts. Section 5.6 discusses some possible mechanisms which might describe the main results. I have done some robustness checks in section 6. In section 6.1, I have done a falsification exercise and estimated the impact of being born before scheduled elections, assuming that the scheduled election is held 12, 24 and 36 months before the actual election. In section 5.2, I have estimated the impact of being born before scheduled elections on the birth composition of a child. Section 7 finally concludes the paper.

2 Literature Review

There is substantial research on whether politicians manipulate policy for electoral gains in developed countries. The first model of political cycles was developed by Nordhaus (1975) and Lindbeck (1976). They argue that with myopic voters opportunistic incumbent politicians stimulate the economy before elections. A separate set of models by Persson and Tabellini (1990) and Rogoff and

Sibert (1988) predict political budget cycles based on rational expectations on the part of voters and asymmetric information between incumbents and voters. In such cases policy makers signal their abilities by creating favorable economic situations before elections which lead to the emergence of political cycles.

Empirical evidence on opportunistic political cycles in developed countries is mixed. McCallum (1978), Alesina (1988) and Klein (1996) reject the claim that the timing of elections influences macroeconomic outcomes such as GDP growth and output in United States. However, Berger and Woitek (1997) and Grier (2008) found that the timing of elections exerts a significant influence on aggregate output for Germany and United States respectively. Apart from macroeconomic targets, several authors have claimed that politicians target policy instruments just before elections. Tufte (1980) shows manipulation of the timing of fiscal instruments for electoral gains. Veiga and Veiga (2007) evaluated a panel composed of Portuguese municipalities during the 1979–2001 period and identified decreases in budget balance and local taxes and increases in expenditures in election years.

There is also a growing literature documenting the presence of political cycles in developing countries. Gonzalez (2002) showed that Mexican government systematically used fiscal policy before elections as a means to secure votes. Akhmedov and Zhuravskaya (2004) investigated a panel of local Russian political jurisdictions and found an increase in public expenditures before elections and a decrease right afterwards. Drazen and Eslava (2010) showed that infrastructure spending increases prior to elections in Columbia.

In the Indian context, Cole (2009) shows that bank lending follows the electoral cycle, with agricultural credit increasing by 5-10% points in an election year. His paper also shows that election year credit booms do not affect agricultural output and as such this paper does not document any welfare implications of electoral credit expansion. Khemani (2004) developed a career concerns model and showed that during election years, fiscal instruments are targeted to provide favors to pivotal groups of voters. My work is similar in spirit to the growing literature on political cycles in India. However, unlike most of the previous work demonstrating manipulation of government policy instruments (expenditure, taxes and credit) during election years, my study analyses the

effect of elections on individual level health outcomes.

A number of recent papers have highlighted the role of politicians' electoral incentives on service delivery which influences public health. Most of these studies have focused on interventions and institutions[2] that strengthen the electorate's voice leading to better public good provision and improved health outcomes (Fujiwara (2014), Chattopadhyay and Duflo (2004), Besley and Burgess (2001)). My paper has important contribution in this field since it shows that the timing of policy is determined by the electoral incentives of the politicians and this has significant impact on health outcomes.

3 Institutional Background

The constitution of India requires that elections for state assemblies be held at five year intervals. However, unscheduled elections are possible. Unscheduled elections occur when alignments shift within the ruling party or the coalition government breaks down. Political pressure from the central government is another important reason for midterm elections. The party governing at the center can dissolve a state legislature following the imposition of Presidential rule in a state. In the period 1975-1998 there were 91 state elections. Of these 33 elections (36%) were unscheduled elections. The presence of midterm elections implies that elections across states do not take place at the same time.

The constitution of India assigns the powers and functions of the center and states[3]. The delivery of public health services is essentially a state responsibility[4]. The bulk of public spending on health is undertaken by the state (Berman (1998)). In addition, the health workers are almost always state employees

2. Interventions include changes in electoral rules like the introduction of new voting technologies (Fujiwara (2014)) and mandated political representations (Chattopadhyay and Duflo (2004)). Besley and Burgess (2001) showed that democratic institutions and mass media play a significant role in increasing the government's responsiveness to the electorate.

3. The central government is responsible and can pass legislation on the services mentioned in the Union list (like defense, foreign affairs). Similarly, state governments have exclusive powers to pass legislation on services mentioned in the state list (like public order, police, and agriculture). There are also areas of joint jurisdiction of the center and the states like education. These items are mentioned in the concurrent list. The states do have jurisdiction over concurrent list but in case of conflict between the center and the states, the former has overriding powers.

4. The health-related provisions in the union list relate mostly to research, and scientific and technical education. The concurrent list includes prevention of infectious diseases from spreading over state boundaries and other issues with wider national ramifications (Gupta and Rani (2004))

(Singh (2008)).

4 Data

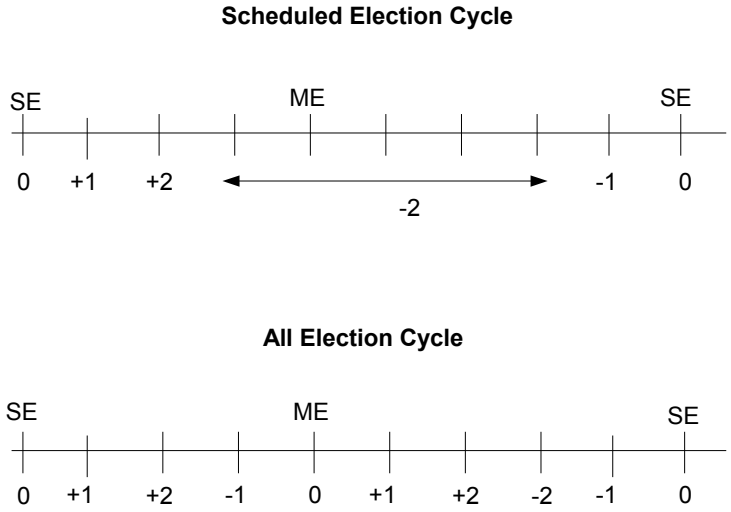
The micro-data used in this survey are derived from the second round of the National Family Health Survey of India (NFHS-2) conducted in 1998. The last round of the NFHS (NFHS III, 2006) does not have district information and so the sample could not be extended beyond 1998. This data-set contains complete fertility histories for ever-married women aged 15-49 in 1998-99, including the retrospective time and incidence of child deaths. The data has information on the district of residence of the household during the time of the survey. While it is possible that the district of birth of the child might not be same as the district of the residence of the household in 1998-99, this is unlikely to be an issue in India. Spatial mobility is low in India(K. D. Munshi and M. R. Rosenzweig (2009); K. Munshi and M. Rosenzweig (2006); Deshingkar and Anderson (2004); Cutler et al. (2010)) and this is particularly true for women after marriage. Migration at the time of marriage forms the most reason for geographical movement among women in India (Rosenzweig and Stark (1989), Deshingkar and Akter (2009)).

I have used this data-set to construct individual-level indicators of infant mortality. The estimation sample contains more than 175,000 children born to more than 56,000 mothers born over the period 1975-1998 across 14 major Indian states. Table 1 shows that the average infant mortality over the sample is 89 per 1000 individuals[5]. There is substantial variation in infant mortality across states. Kerala has the lowest incidence of infant deaths at 29 per thousand populations while the Uttar Pradesh has the highest rate at 117 per thousand. The sample averages of other individual level controls (listed in Appendix 1) are also reported in Table 1.

The election data comes from the official website of the Election Commission of India. This data include identity of the contestant, party affiliation and poll percentage of the electoral unit [6]. Table 1b shows the distribution of births across election and non-election years for both scheduled and all elections. The

5. This can be compared with the global average of 63 per 1000 in 1990
6. Assembly elections are held at constituency level which is typically smaller than a district.

following figure captures this cycle



In the figure, SE denotes scheduled election and ME denotes midterm election. 0 indicates children born 0-12 months before elections, -1 indicates children born 12-24 months before an election, -2 indicates children born more than 24 months before election, +1 indicates children born 1-12 months after an election, +2 indicates children born 13-24 months before an election. By construction the proportion of children born in all categories, except those born more than two years before, is higher for all elections as compared to the scheduled elections. The figures shown in Table 1b confirm this. Also by construction the proportion of children born more than 24 months before scheduled elections is much higher than children born in the other categories.

Table 1b also shows a relatively higher proportion of children born 0-12 months before scheduled elections. This might imply that the mothers who give birth during election years are different from mothers who give birth in non-election years. However, comparison between children born to the same mother addresses this problem.

I have also tried to test whether the effect of the timing of elections on infant

mortality is higher in politically more competitive regions. I define a region to be politically competitive if the incumbent party/coalition had a narrow margin of victory in the previous election in that region. The definition of regions however is a little problematic. In India elections are held at constituency level and constituency level information is not available in the NFHS dataset. However, the NFHS data reports the district of residence. A district is composed of a number of constituencies (usually 9). Thus, I have defined the margin of victory of the incumbent ruling party at the district level. This is given by the absolute difference between the proportion of seats obtained by the ruling party or ruling coalition and the proportion of seats obtained by the biggest opposition. Mathematically, the variable measuring political competition is given by:

A_{dst}=$|p_{wdst} - p_{odst}|$

where A_{dst} is the variable measuring political competition in the district d at time t. The variable p_{wdst} measures the proportion of seats obtained by the ruling party or ruling coalition in the last assembly election, corresponding to time t in district d of state s. p_{odst} measures the proportion of seats obtained by the biggest opposition in district d of state s in the previous election.

The Election Commission of India website provides information on party affiliations of individual contestants in an election. However, the name of the ruling party or ruling coalition is not available from the election commission website which is essential for computing the political competition variable. I have used the Times of India database to ascertain the name of the party (or all the parties in case of coalition governments) that ruled a state.

In order to analyze the possible mechanisms behind the fall in infant mortality I have estimated the impact of the timing of elections on the following outcomes: the number of antenatal checkups during pregnancy, whether the mother had a tetanus injection during pregnancy and the incidence of low birth weight. Information on these variables is available only for children born after 1995 in NFHS II data. Three years is an extremely short period for estimating the impact of election cycles. At most one election per state will be covered and some states might not have a single scheduled election during this time. In order to address this problem of small sample size I have used NFHS I (1992-93) in

addition to NFHS II for estimating these. Thus, the sample in this case contains information on children born between 1987-1992 from NFHS I and 1995-1998 from NFHS II[7].

5 Empirical Strategy and Results

5.1 Effect of Elections on Infant Mortality

I estimate the effect of being born in an election year on infant mortality. The basic estimating equation is:

$$y_{imdst} = \alpha + \beta E_{ist} + \phi X_{imdst} + \tau_t + \mu_m + \epsilon_{idst} \quad (1)$$

where y_{imdst} is a dummy that indicates whether the index child i, born to mother m, in district d of state s in year t died by the age of 12 months. E_{ist} is a dummy equal to 1 if the child i is born between 0 and 12 months before an election. μ_m and τ_t denote mother and year of birth fixed effects. X_{imdst} includes the controls used throughout the paper. Child specific controls included in X_{imdst} include dummies for the order of birth, month of birth of the child and a dummy indicating whether the child is female. These controls account for the variation in death risk within children born to the same mother. In addition real state domestic product lagged by two years and average voter turnout in districts in the previous election are also included as controls. Real state domestic product controls for the level of prosperity across states[8].

Inclusion of mother fixed effects is particularly important. A problem of comparing children born in election years with children born in non-election years is that mothers who give birth just before elections might be different from mothers who give birth in other years. The differences can be due to differential living standards, fertility, contraception preferences and awareness of the availability of health-related technology and services. Thus, health improvements of children born before elections might be due to selection issues rather than changes in government policies. This will overestimate the effects

7. The main results are also estimated using both rounds of NFHS as shown in the Appendix Table 4. The results are consistent with estimation using only NFHS II

8. Results are robust to the inclusion of contemporaneous GDP as shown in Appendix Table 2

if relatively better off mothers give birth in the election years as compared to non-election years. Similarly if poorer mothers choose to give birth before elections[9], our results will be underestimated. Mother fixed effect takes account of the selection issues due to the change in the type of mothers who give birth before elections.

Here it is important to distinguish between scheduled elections and midterm elections. The scheduled elections are those which are mandated by the Constitution of India and occur five years after the previous election. Whereas midterm elections are those that occur one, two, three or four years after the last election (either scheduled or midterm), that is, before the completion of the full term of the present elected government in office. The timing of midterm elections is less likely to be exogenous. They are also likely to be sudden and so the government has less time to adjust policies. I have estimated the results separately for all elections, midterm elections and scheduled elections. We would expect the coefficient of the election dummy, β in equation (1), to be negative and statistically significant for children born before scheduled elections and to be statistically insignificant for children born before midterm elections.

Columns 1, 3 and 5 of Table 2 present the estimates of equation (1) for all elections, scheduled elections and midterm elections respectively. Column 1 shows that infant mortality is lower for children born between 0-12 months before all elections. The result is significant at the 10% level. The fall is much higher for children born 0-12 months before scheduled elections as shown in column 3. Children born 0-12 months before scheduled elections have over 13% more survival chances. The estimate for scheduled election is highly significant at the 1% level. Consistent with the fact that midterm elections provide less scope for the opportunistic manipulation, the results are insignificant for children born 0-12 months before midterm elections as shown in column 5.

I have also estimated the effect of the entire election cycle on infant mortality. The estimating equation is:

$$Y_{imdst} = \alpha+\beta_{-1}E_{-1ist}+\beta_0 E_{ist}+\beta_{+1}E_{+1ist}+\beta_{+2}E_{+2ist}+\gamma X_{imdst}+\delta_m+\tau_t+\xi_{imdst} \quad (2)$$

9. This is more likely since these mothers are most in need of resources

Where E_{ist} is a dummy which is equal to 1 if the child is born 0-12 months before election, E_{-1ist} is a dummy which is equal to 1 if the child i is born between 13 and 24 months before an election, E_{+1ist} is a dummy equal to 1 if the child i is born between 1 and 12 months after an election, E_{+2ist} is a dummy equal to 1 if the child i is born between 13 and 24 months after an election[10]. The omitted category includes the children born 2 or more years before election[11].

Figure 1 shows the predicted relationship estimated by equation (2). Panel A shows the relationship for all elections and panel B shows the relationship for scheduled elections. While panel A shows that infant mortality is more or less flat over the election cycle for all elections, panel B shows that infant mortality falls significantly for children born 0-12 months before scheduled elections

Columns 2, 4 and 6 of Table 2 show the estimates of equation (2) for all elections, scheduled elections and midterm elections respectively. Column 2 shows that children born 0-12 months before all elections have lower mortality risk. The estimates are all statistically insignificant. On the other hand children born 0-12 months before scheduled elections have significantly lower mortality risk as shown in column 4. The effect of being born before midterm election is small and statistically insignificant.

One problem of comparing children born before scheduled election years with children not born before scheduled election is that the comparison group consists of children born before midterm elections and those born in off-election years. I have estimated the results dropping all children born 0-12 months before midterm elections such that the control group consists of children born in the off-election years. The results are presented in Table 3. Columns 1 and column 2 of Table 3 are the same as columns 3 and 4 of Table 2. Columns 3 and 4 present results corresponding to regressions estimated by excluding children born 0-12 months before midterm elections. It can be seen that the results are similar in sign and significance. Columns 5 and 6 show estimates of equation (2) using the full sample but controlling for midterm elections (that is including a dummy equal to 1 if the child i is born 0-12 months before midterm elections.).

10. Section 5.3 and 5.4 will show results using different time frames.

11. The results obtained by excluding other omitted categories is shown in Appendix Table 1

The estimates are again similar in sign and magnitude.

5.2 Neonatal and 2-12 months mortality

Infant mortality can be disaggregated into two components: neonatal mortality and mortality during the remaining 2-12 months of an infant's life. Neonatal mortality is most influenced by the mother's health and prenatal care. It is also extremely significant for India because most of the deaths during infancy occur in the first month of life. In my data the average neonatal mortality over the sample is 58 per 1000 while average infant mortality is 88.9 per thousand.

I have estimated the results separately for neonatal and 2-12 months mortality. The results are shown in Table 4. The first two columns of Table 4 are the same as column 3 and 4 of Table 2. Columns 3 and 4 show estimates for neonatal mortality and the last two columns contain estimates for 2-12 months mortality. The results show that children born before scheduled elections gain both from reduced neonatal and 2-12 month mortality. Children born 0-12 months before scheduled election years have 13% and 14% reduced chance of neonatal and 2-12 month mortality respectively.

5.3 Closeness to Election and Infant Mortality

The children born closer to scheduled elections are more likely to benefit from policy manipulation before elections. In order to test this, I have divided the children born 0-12 months before scheduled elections into two groups: those who are born 0-6 months before elections and those who are born 6-12 months before elections. I have also regressed infant mortality on the distance in months of month-year of birth of a child from the month-year of the next scheduled election. The specification for these regressions are similar to equation (1).

Table 5 shows the estimates from the above regressions. Column 1 shows the effect of being born 0-6 months before scheduled elections. The regression corresponding to column 2 includes a dummy indicating whether a child is born 6-12 months before scheduled election in addition to the dummy indicating whether a child is born 0-6 months before scheduled election. Column 3 is similar to column 3 of Table 2 and shows the effect of being born 0-12 months before scheduled elections. The results show that children who are born 0-6

months before scheduled elections experience a greater fall in infant mortality as compared to children born 6-12 months before scheduled elections. The estimates of column 4 are obtained by regressing the infant mortality variable on the difference between the month-year of birth and the month-year of next scheduled election. Column 4 also shows that children born closer to elections are more likely to survive their infancy.

5.4 Infant Mortality just before and just after scheduled elections

It might be argued that the mothers of children born just after scheduled elections have been exposed to better prenatal care for the most part of their pregnancy. Thus, these children should also experience better health outcomes.

I have estimated the effect of being born just before and just after scheduled elections. The results are shown in Table 6. The first 3 columns show the impact of being born 0-6, 0-2 and 0-1 months before scheduled elections respectively. Column 4, 5 and 6 show the impact of being born 0-1, 0-2 and 0-6 months after scheduled elections. The table shows that the effect of being born in election years is strongest for children born 0-1 months before scheduled elections followed by children born 0-1 months after scheduled elections. However, the effect drops if we consider children born 0-2 months before and 0-2 months after the election. The drop is higher for children born 0-2 months after election since the cohort born 0-2 months after election are less exposed to improved prenatal care. The effect becomes statistically insignificant for children born 0-6 months after scheduled elections.

5.5 Margin of victory as a determinant of political cycle

It is likely that politicians will have incentive to behave more opportunistically in terms of manipulating service provision when their margin of victory is small. Thus, I have examined whether the extent of political cycles depends on the margin of victory enjoyed by the current ruling party or coalition. As mentioned before, elections in India take place at the constituency level which has to be aggregated to the district level to be merged with the individual level NFHS

data. The margin of victory is given by the absolute difference between the proportion of seats obtained by the ruling party/coalition and the proportion of seats obtained by the biggest opposition in a district.

The simplest test estimating the role of political competition would be to look at the sign and significance of the interaction between the election dummy and the district margin of victory variable. Thus, I have estimated the following equation.

$$Y_{imdst} = \alpha + \beta E_{ist} + \mu E_{ist} * A_{dst} + \gamma X_{imdst} + \delta_m + \tau_t + \zeta_{imdst} \qquad (3)$$

If infant mortality falls in election years and the fall is greater in areas of higher political competition, we expect the coefficient on the election dummy, β to be negative and statistically significant and μ to be positive and statistically significant.

Figure 2 shows the predicted relationship between infant mortality and the absolute margin for children born before a scheduled election and children not born before scheduled elections. While panel A shows the relationship between infant mortality and the absolute margin of victory for children born 0-12 months before scheduled elections, panel B shows the same relationship for children born 0-6 months before scheduled elections. Figure 2 shows that among children born before scheduled elections, infant mortality is lower in districts where the state ruling party had a narrower margin of victory in the previous election. Infant mortality is flat over the absolute margin for children not born before scheduled elections.

Table 7 shows the estimates of equation (3). Column 1 and 2 show the results for children born 0-12 months before a scheduled election and column 3 and 4 show the results for children born 0-6 months before scheduled elections. The results show that the fall in infant mortality before a scheduled election is higher for children born in districts where the previous election was particularly close. This is true for both children born 0-12 months before an election and children born 0-6 months before an election. However, the effect of targeting is more pronounced for children born 0-6 months before a scheduled election, as shown by the coefficient of the interaction term.

5.6 Mechanisms

The government can influence infant mortality in a number of ways. The public health system might work more efficiently and so the usage of medical services might go up. I have estimated the impact of being born before scheduled elections on the number of antenatal checkups of the mother during pregnancy and whether the mother had at least one tetanus injection during pregnancy[12].

Secondly children born just before elections are likely to be better nourished. This might be the result of two factors. Firstly, if government job schemes (food work schemes) run more efficiently before elections, employment rates will go up in years preceding elections. The increased income is likely to have an impact on child health and child nutrition. Secondly, the public distribution system which is the food security network in India might function better before scheduled elections. To estimate the impact of the timing of elections on nutritional status of children I estimate the impact of the timing of elections on the incidence of low birth weight.

As pointed out earlier, the information on these variables is not available for the majority of children born to a mother. Thus, I could not include mother fixed effect in these regressions. I have included district fixed effects and some additional controls like parental education, membership in a disadvantaged socioeconomic group and a dummy variable for urban residence in these regressions.

Table 8-10 shows the estimated results. Table 8 shows the results for antenatal visits during pregnancy by mothers of children born 0-6 and 0-12 months before elections. Columns 1 and 2 of Table 8 show the estimates for children born 0-6 months before pregnancy while columns 3 and 4 contain estimates for children born 0-12 months before an election. Columns 1 and 3 show the baseline estimates without interaction effects. Columns 2 and 4 include the interaction term between the election dummy and the absolute margin. The estimates column 1 and 3 show that mothers of children born before scheduled elections made more frequent antenatal visits during pregnancy. Columns 2 and

12. I have shown the impact of the timing of scheduled elections on the presence of doctors during delivery. However due to the discrepancies in the definition of this variable between the coding documents of NFHS I, I had to use data from NFHS II only. Thus the sample is further small in this case and consists of children born between 1995-1998.

4 show that the impact is higher in politically more competitive districts. The estimates also show that the impact on antenatal visits is higher for children born 0-6 months before an election as compared to children born 0-12 months before an election.

Table 9 shows that results for estimators of the probability of having at least one tetanus injection during pregnancy. Column 1 shows that mothers of children born 0-6 months before scheduled elections were more likely to have at least one tetanus injection during pregnancy. The effect is insignificant for children born 0-12 months before an election. Column 2 and 4 however show evidence of targeting for both 0-6 and 0-12 months.

Table 10 shows the impact of being born in election years on the probability of having a low birth weight. The estimates show that the probability of low birth weight falls just before elections. The effect becomes insignificant if we consider children born 0-12 months before election. The coefficient of the interaction between the election dummy and the margin of victory is however insignificant for both children born 0-12 and 0-24 months before elections.

6 Robustness Checks

6.1 Placebo tests

I have done a falsification exercise to check the robustness of my results. Assuming that the election took place 12 months, 24 months and 36 months before the real election, I have estimated equation 1 and 3. If the previous estimates were driven by pre-existing state-specific trends, then the estimates of those placebo treatment's effects on infant mortality would be similar in sign and magnitude to the main estimates and statistically significant. Table 11 shows the estimated results. The coefficients on all of the placebo treatment dummies are small and insignificant

6.2 Birth of more preferred children and the timing of elections

I also explore the possibility that my results are driven by the gender composition of births. Given the extent of son preference that exists in India (Pande and Astone (2007); Clark (2000)), the reduction in infant mortality before scheduled elections could be driven by the fact that families have more boys then. I have estimated the impact of being born 0-6 or 0-12 months before an election on the sex of the child. Table 12 shows the estimated results. The results are statistically insignificant. This implies that the gender composition remains unchanged for children born close to elections.

6.3 The effect depends on the magnitude of the problem of infant mortality across states

The reduction in infant mortality before scheduled elections should be higher in states which have low infant mortality rates compared with states in which there is little scope for reduction. In my sample one state, Kerala has significantly lower infant mortality rates as compared to the others. The infant mortality rate in Kerala is 29 per 1000 compared to the sample average of 89 per 1000. All other states except Kerala have infant mortality rates over of 60 per 1000. Thus, the effect of the timing of elections should be higher if Kerala is excluded from analysis. Table 13 shows the results excluding Kerala. It can be seen that the magnitude of the estimates improves with the exclusion of Kerala.

6.4 Including politically non-competitive states

The main argument for the decline in infant mortality just before elections is that politicians are opportunistic and want to remain in power. Thus, we expect the effect of the timing of elections on infant mortality to be non-existent or weak in states with very little political competition. For the 14 states considered so far, the government changed at least once during the sample period.[13] I have

13. Among the 15 major states in India, West Bengal is the only state where government changed just once during the sample period. The left front came into power in West Bengal in 1977 and remained in power until 2011. Thus, one party ruled for almost the entire sample period (1975-1998). West Bengal has very little political competition and so we expect political cycles to be significantly muted there.

estimated the results including all 15 major states of India. Table 14 presents results with all states using specification 1 and 2. Column 1 and 2 of Table 14 repeats column 3 and 4 of Table 2. Column 3 and 4 of Table 14 shows the results with all states. As expected, the magnitude and the level of significance of the estimates drop if we consider all states.

If it is indeed the lack of political competition that results in the estimates becoming insignificant if we consider all states, then including the interaction term between the election dummy and the political competition variable as in specification (3) should return significant estimates. Table 15 presents the estimates of equation (3) for all states. The results are statistically significant once again.[14]

7 Conclusion

The economics and political science literatures provide evidence that politicians have strong incentives to improve the economic conditions of voters in election years. These incentives to provide special favors can be higher in more politically competitive regions. However, there has been very little empirical research on the welfare implications of these political cycles. The results presented in this paper show that the impacts of electoral cycles are not confined to economic policies and macroeconomic outcomes alone. Rather, they can have important effects on individual level developmental outcomes.

This paper shows that infant mortality is significantly lower for children born just before scheduled elections in states with at least some political competition. The results further show that the reduction in infant mortality is higher in politically more competitive districts.

My results also provide evidence that medical care utilization goes up before elections. Mothers of children born just before elections are likely to have more regular antenatal checkups and have at least one tetanus injection during pregnancy. Antenatal visits can have significant positive effects on both mother and child health. Kitzman et al. (1997) showed that increased consultation with

14. The regressions for mechanisms are also estimated using data from all states. The results are presented in Appendix Table 5 and the results are similar to the results with only the politically competitive states.

nurses during pregnancy reduces pregnancy induced hypertension and childhood injuries. Children born just before elections are also less likely to be of low birth weight. Birth weight determines a number of adult life outcomes like educational attainment and earnings. Thus, my results suggest that periods of prosperity created by political cycles can potentially have long-term impacts on the lives of individuals in poor countries.

Health in general and particularly child health is an extremely important issue in developing countries. Child deaths occur due to insufficient health care facilities or inadequate nutrition (Jones et al. (2003)). The availability of health care facilities and nutrition both depend on government policies and thus political variables play an important role in influencing child survival. These variables can be manipulated by politicians to signal their ability to improve the economic conditions of voters before elections, or simply because voters are myopic. My results are consistent with the maximization of political gains by politicians leading to extremely different results for similar children (born to the same mother) separated only by their timing of birth.

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Appendix 1

The data used in the paper come from a number of sources. They cover the 14 main Indian states and span the period 1975-1998.

The unit of observation in this paper is individual child. Since twins have significantly high mortality rate as compared to singletons (Buekens and Wilcox (1993)), I have considered only the singleton births for this paper. The results are however robust to the inclusion of twins as shown in Appendix Table 3.

Infant mortality variable is defined as a dummy variable indicating whether a child died by the age of 12 months. The variable is defined for children born between 1975 and 1998. The data is derived from the second round of National Family Health survey (NFHS II) conducted in 1998-99.

Neonatal mortality variable is defined as a dummy indicating whether the child died by the age of 1 month. The variable comes from NFHS II and is defined for children born during 1975-1998.

2-12 months mortality variable is given by a dummy indicating whether the child died between 2 and 12 months of their life. This variable also comes from NFHS II and is defined for children born 1975-1998.

Dummy for sex, order of birth dummies and month of birth dummies come from NFHS II and are defined for the period 1975-1998. These variables are used as controls in sections 5.1-5.5 and section 6.

Number of antenatal visits gives the total number of antenatal visits made by the mother during her pregnancy. The incidence of low birth weight is given by a dummy variable equal to 1 if the mother reported that the child was of low birth weight. Whether the mother had a tetanus injection during pregnancy is also given by a dummy variable indicating whether the mother had at least one tetanus injection during pregnancy. These variables are defined for children born during 1987-1992 whose mothers were surveyed in NFHS I and children born during 1995-1998 whose mothers were surveyed in NFHS II.

The child level and mother level controls used in the mechanisms regressions come from NFHS I and NFHS II. The controls include dummy for sex of the child, order of birth dummies, month of birth dummies, a dummy for membership in scheduled castes (historically disadvantaged social group in India), a dummy for membership in scheduled tribes, a dummy indicating whether the

mother is Muslim and a dummy for urban area of residence. The regressions also include mothers' and fathers' years of education. Although the information on controls is available for all mothers, the sample used in this survey is restricted to mothers of children born in the period 1987-1992 (data derived from NFHS I) and 1995-1998 (data derived from NFHS II). This is because the dependant variables in the mechanism regressions are available only for those years.

The dummies for being born 0-1 months, 0-2 months, 0-6 months, 0-12 months, 13-24 months before and after elections are derived from official data of the election commission of India and the first and second round of NFHS. The election commission of India website gives the month-year of all elections which took place during the sample period. The NFHS data has information on the month-year of birth of a child. Using these two datasets I have created the dummies for being born before and after elections. These variables are defined for the period 1975-1998.

Average district turnout is constructed from the constituency level electoral data obtained from the official website of the election commission of India. Since a constituency is smaller than a district, turnout has been aggregated to the district level.

Real GDP per capita and real state GDP per capita lagged by two years are obtained from the publicly available EOPP (Economic Organization and Public Policy Programme) database.

Table 1: Summary Statistics (Child Characteristics)

Variable	Mean	(Std. Dev.)	N
Infant Mortality (Scaled 0-100)	8.923	(28.510)	175804
Neonatal Mortality (Scaled 0-100)	5.814	(23.402)	175804
2-12 month Mortality (Scaled 0-100)	3.11	(17.359)	175804
Female Child	0.48	(0.5)	175804
Birth Order 1	0.278	(0.448)	175804
Birth Order 2	0.246	(0.431)	175804
Birth Order 3	0.184	(0.387)	175804
Birth Order 4	0.121	(0.327)	175804
Birth Order 5	0.075	(0.264)	175804
Birth Order 6	0.045	(0.208)	175804
Birth Order 7	0.025	(0.157)	175804
Birth Order 8	0.014	(0.115)	175804
Birth Order 9	0.007	(0.083)	175804
Birth Order 10	0.005	(0.073)	175804
Month of Birth 1	0.068	(0.253)	175804
Month of Birth 2	0.063	(0.243)	175804
Month of Birth 3	0.078	(0.269)	175804
Month of Birth 4	0.076	(0.265)	175804
Month of Birth 5	0.083	(0.276)	175804
Month of Birth 6	0.087	(0.282)	175804
Month of Birth 7	0.087	(0.282)	175804
Month of Birth 8	0.106	(0.308)	175804
Month of Birth 9	0.089	(0.285)	175804
Month of Birth 10	0.097	(0.296)	175804
Month of Birth 11	0.088	(0.284)	175804
Month of Birth 12	0.076	(0.266)	175804

Notes: Standard deviations are in parentheses. Infant mortality, Neo-natal mortality and 2-12 month mortality are defined as percentages. Female denotes the gender of the child. Month of birth, order of birth refer to the month and order of birth of a child. Sample includes children born in the period 1975-1998 from 14 major states in India.

Table 1b: Summary Statistics (Electoral Variables)

Variable	Mean	(Std. Dev.)	N
Born 0-12 Months before Election	0.265	(0.441)	175804
Born 13-24 Months before Election	0.182	(0.386)	175804
Born 1-12 Months after Election	0.226	(0.418)	175804
Born 13-24 Months after Election	0.208	(0.406)	175804
Born more than 24 Months before Election	0.120	(0.325)	175804
Born 0-12 Months before Scheduled Election	0.183	(0.387)	175804
Born 13-24 Months before Scheduled Election	0.147	(0.355)	175804
Born more than 24 Months before Scheduled Election	0.434	(0.496)	175804
Born 1-12 Months after Scheduled Election	0.119	(0.324)	175804
Born 13-24 Months after Scheduled Election	0.125	(0.331)	175804
Absolute Margin	0.497	(0.285)	175804
Average District Turnout	0.583	(0.108)	175804

Notes: Standard deviations are in parentheses. Born m to n months before or after election is a dummy indicating whether the child is born m to n months before or after an election. The figures are tabulated for all elections and scheduled elections. Absolute margin of victory is defined as the proportion of seats by which the ruling party/coalition in the state won/lost in the district of birth of the child during the previous election. Sample includes children born in the period 1975-1998 from 14 major states in India.

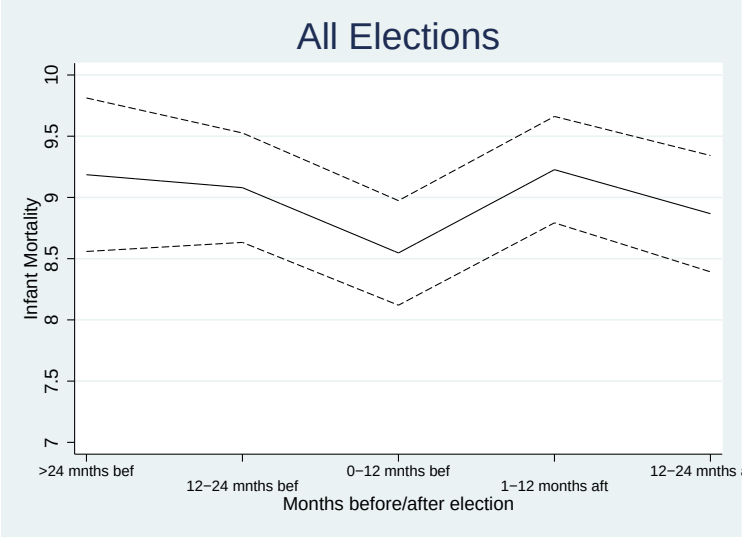
Table 1c: Summary Statistics (Mother's characteristics)

Variable	Mean	(Std. Dev.)	N
Scheduled Caste	.173	(.379)	74580
Scheduled Tribe	0.094	(0.292)	74580
Muslim	0.133	(0.339)	74580
Urban	0.22	(0.414)	74580
Mother's Years of Education	2.932	(4.322)	74580
Father's Years of Education	5.79	(5.04)	74580
Number of Antenatal Visits	1.973	(2.862)	56140
Tetanus during pregnancy	0.651	(.477)	62004

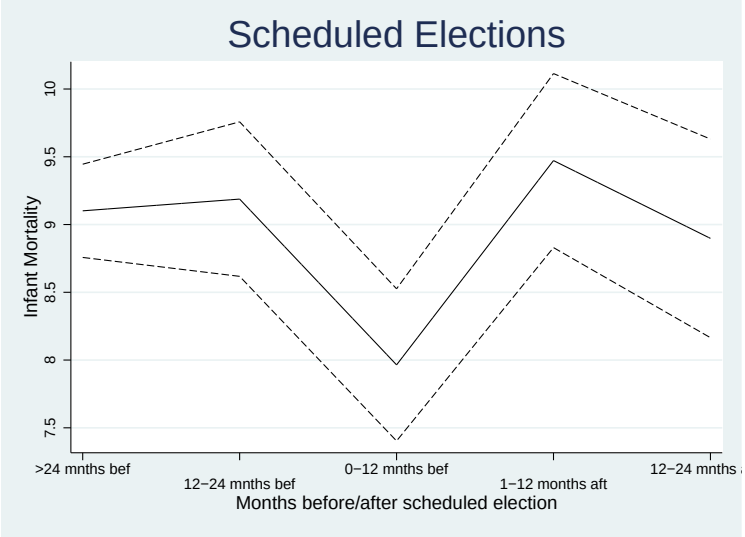
Notes: Standard deviations are in parentheses. Scheduled Caste, Scheduled Tribe and Muslim are dummies indicating whether the mother belonged to historically disadvantaged caste (Scheduled Caste) or tribal groups (Scheduled Tribe) or the second largest religious community in India (Muslim). Tetanus during pregnancy is a dummy equal to 1 if the mother had at least one tetanus injection during pregnancy. The sample consists of mothers of children born in the period 1987-1992 (NFHS I) and 1995-1999 (NFHS II). This sample is used to estimate tables 8-10.

Figure 1: Election and Infant Mortality

Panel A



Panel B



Notes: The panels in the figure shows the predicted relationship between infant mortality and years relative to scheduled election and all election years. While Panel A graphs the relationship for all elections, panel B shows the relationship for scheduled elections.

Table 2: Elections and Infant Mortality

	(1) All	(2) All	(3) Scheduled	(4) Scheduled	(5) Midterm	(6) Midterm
Born 0-12 Months before Election	-0.560*	-0.639				
	(0.290)	(0.388)				
Born 13-24 Months before Election		-0.106				
		(0.366)				
Born 1-12 Months after Election		0.0413				
		(0.429)				
Born 13-24 Months after Election		-0.318				
		(0.389)				
Born 0-12 Months before Scheduled Election			-1.194***	-1.137***		
			(0.351)	(0.398)		
Born 12-24 Months before Scheduled Election				0.0866		
				(0.390)		
Born 1-12 Months after Scheduled Election				0.371		
				(0.436)		
Born 12-24 Months after Scheduled Election				-0.203		
				(0.469)		
Born 0-12 Months before Midterm Election					0.267	0.295
					(0.433)	(0.452)
Born 12-24 Months before Midterm Election						0.0667
						(0.471)
Born 1-12 Months after Midterm Election						0.0823
						(0.441)
Born 12-24 Months after Midterm Election						-0.222
						(0.438)
Observations	175804	175804	175804	175804	175804	175804
r2	0.341	0.341	0.341	0.341	0.341	0.341

Notes: Standard errors in parentheses. Each column represents a separate regression. Infant mortality is the dependant variable in all the columns. Columns 1 and 2 report coefficients on dummies for all election, columns 3 and 4 report coefficients on dummies for scheduled elections and columns 5 and 6 report coefficients on dummies for midterm elections. In addition to the reported variables, all regressions include mother's fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child. Other controls include average district turnout, real state domestic product per capita lagged by two years and month of polling dummies. Sample includes children born in the period 1975-1998 from 14 major states in India. Errors are clustered at district level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3: Accounting for Midterm Elections

	(1)	(2)	(3)	(4)	(5)	(6)
	Baseline		Dropping midterm		Including midterm controls	
Born 0-12 Months before Scheduled Election	-1.194***	-1.137***	-1.258***	-1.176***	-1.179***	-1.099***
	(0.351)	(0.398)	(0.364)	(0.427)	(0.353)	(0.411)
Born 12-24 Months before Scheduled Election		0.0866		-0.121		0.120
		(0.390)		(0.451)		(0.407)
Born 1-12 Months after Scheduled Election		0.371		0.517		0.410
		(0.436)		(0.473)		(0.444)
Born 12-24 Months after Scheduled Election		-0.203		0.00429		-0.177
		(0.469)		(0.524)		(0.474)
Born 0-12 Months before Midterm Election					0.111	0.171
					(0.436)	(0.454)
Observations	175804	175804	157442	157442	175804	175804
r2	0.341	0.341	0.370	0.370	0.341	0.341

Notes: Standard errors in parentheses. Each column represents a separate regression. Infant mortality is the dependant variable in all columns. Columns 1 and 2 report coefficients on dummies for children born before or after scheduled elections. The sample here includes children born before midterm election (same as columns 3 and 4 of Table 2). Columns 3 and 4 also report coefficients on dummies for children born before and after scheduled elections but the sample now does not include children born 0-12 months before midterm election. Columns 5 and 6 include a dummy for whether a child is born 0-12 months before midterm election in addition to the scheduled election dummies. Apart from the reported variables, all regressions include mother's fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child. Other controls include average district turnout, real state domestic product per capita lagged by two years and month of polling dummies. Errors are clustered at district level.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Neonatal and Infant mortality

	(1)	(2)	(3)	(4)	(5)	(6)
	Infant Mortality		Neonatal Mortality		2-12 Month Mortality	
Born 0-12 Months before Scheduled Election	-1.194***	-1.137***	-0.746**	-0.730**	-0.445**	-0.407*
	(0.351)	(0.398)	(0.289)	(0.322)	(0.210)	(0.237)
Born 12-24 Months before Scheduled Election		0.0866		0.00852		0.0781
		(0.390)		(0.340)		(0.246)
Born 1-12 Months after Scheduled Election		0.371		0.231		0.140
		(0.436)		(0.352)		(0.283)
Born 12-24 Months after Scheduled Election		-0.203		-0.153		-0.0498
		(0.469)		(0.350)		(0.269)
Observations	175804	175804	175804	175804	175804	175804
r2	0.341	0.341	0.341	0.341	0.295	0.295

Notes: Standard errors in parentheses. Each column represents a separate regression. Infant mortality is the dependant variable in column 1 and 2, neonatal mortality in column 3 and 4 and 2-12 month mortality in column 5 and 6. The coefficients reported correspond to dummies for children born before and after scheduled elections. In addition to the reported variables, all regressions include mother's fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child. Other controls include average district turnout, real state domestic product per capita lagged by two years and the dummies for month of polling. Sample includes children born in the period 1975-1998 from 14 major states in India. Errors are clustered at district level.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Closeness to Election and Infant Mortality

	(1) 0-6 Bef Sch Elec	(2) 0-6,6-12 Bef Sch Elec	(3) 0-12 Bef Sch Elec	(4) Dist Nxt Sch Elec
Born 0-6 Months before Scheduled Election	-1.035**	-1.227***		
	(0.419)	(0.428)		
Born 6-12 Months before Scheduled Election		-1.145**		
		(0.484)		
Born 0-12 Months before Scheduled Election			-1.194***	
			(0.351)	
Dist of the next Scheduled ELec from the MOB				0.010**
				(0.005)
Observations	175804	175804	175804	175804
r2	0.341	0.341	0.341	0.341

Notes: Standard errors in parentheses. Each column represents a separate regression. Infant mortality is the dependant variable. Column 1 reports the coefficient on the dummy indicating whether a child is born 0-6 months before scheduled election. Column 2 reports the coefficients on dummies indicating whether a child is born 0-6 months and 6-12 months before scheduled election. Column 3 reports coefficients on a dummy indicating whether a child is born 0-12 months before election. The coefficient reported in columns 4 corresponds to the distance between the month-year of birth of the child and the month year of next scheduled election. In addition to the reported coefficients, all regressions include mother's fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child. Other controls include average district turnout, real state domestic product per capita and the month of polling dummies. Sample includes children born in the period 1975-1998 from 14 major states in India. Errors are clustered at district level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

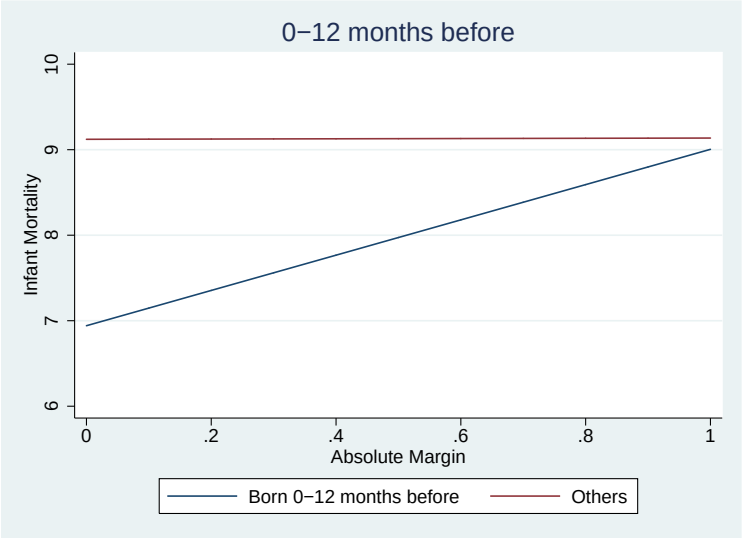
Table 6: Slightly before and after scheduled election

	(1) 0-6 Months Before	(2) 0-2 Months Before	(3) 0-1 Months Before	(4) 0-1 Months After	(5) 0-2 Months After	(6) 0-6 Months After
Born 0-6 Months before Scheduled Election	-1.035**					
	(0.419)					
Born 0-2 Months before Scheduled Election		-1.305**				
		(0.571)				
Born 0-1 Months before Scheduled Election			-1.688**			
			(0.659)			
Born 0-1 Months after Scheduled Election				-1.663**		
				(0.663)		
Born 0-2 Months after Scheduled Election					-1.186**	
					(0.594)	
Born 0-6 Months after Scheduled Election						0.0294
						(0.451)
Observations	175804	175804	175804	175804	175804	175804
r2	0.341	0.341	0.341	0.341	0.341	0.341

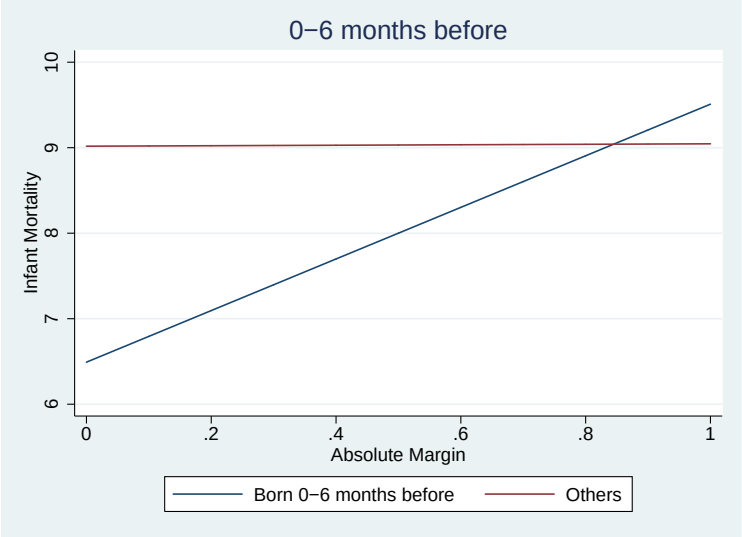
Notes: Standard errors in parentheses. Each column represents a separate regression. Infant mortality is the dependant variable. Columns 1 and 6 report coefficients on dummies indicating whether a child is born 0-6 months before and after scheduled election respectively. Columns 2 and 5 report coefficients on dummies for children born 0-2 months before and after scheduled election respectively. Columns 3 and 4 report coefficient on dummies indicating whether a child is born 0-1 months before and after scheduled election respectively. In addition to the reported variables, all regressions include mother's fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child. Other controls include average district turnout, real state domestic product per capita lagged by two years and month of polling dummies. Column 1 includes coefficient of dummy indicating whether the child is born 0-6 Sample includes children born in the period 1975-1998 from 14 major states in India. Errors are clustered at district level.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 2: Role of Political Competition

Panel A



Panel B



Notes: The panels in the figure shows the predicted relationship between infant mortality and absolute margin of victory for children born before scheduled election and other years. While Panel A graphs the relationship for children born 0-12 months before scheduled election, panel B shows the relationship for children born 0-6 months before scheduled election.

Table 7: Role of Political Competition

	(1)	(2)	(3)	(4)
	0-12 months before		0-6 months before	
	Baseline	With Interactions	Baseline	With Interactions
Born 0-12 Months before Scheduled Election	-1.194***	-2.180***		
	(0.351)	(0.598)		
Absolute Margin x Born 0-12 Months before Scheduled Election		2.048**		
		(1.002)		
Born 0-6 Months before Scheduled Election			-1.035**	-2.526***
			(0.419)	(0.824)
Absolute Margin x Born 0-6 Months before Scheduled Election				2.989**
				(1.380)
Absolute Margin		0.0146		0.0279
		(0.482)		(0.477)
Observations	175804	175804	175804	175804
r2	0.341	0.341	0.341	0.341

Notes: Standard errors in parentheses. Each column represents a separate regression. Infant mortality is the dependant variable. Columns 1 and 3 report the coefficients on dummies for children born 0-6 months and 0-12 months before scheduled elections. Columns 2 and 4 report the coefficients on dummy variables indicating whether a child is born 0-6 or 0-12 months before scheduled elections and interactions between the election dummy and the absolute margin of victory of the ruling party/coalition in the previous election. Columns 2 and 4 also report the coefficient on the absolute margin of victory variable. In addition to the reported variables, all regressions include mother's fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child. Other controls include average district turnout, state domestic product lagged by two years and dummies for the month of polling. Sample includes children born in the period 1975-1998 from 14 major states in India. Errors are clustered at district level.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 8: Antenatal Visits

	(1)	(2)	(3)	(4)
	0-6 months before		0-12 months before	
Born 0-6 Months before Scheduled Election	0.126***	0.285***		
	(0.0468)	(0.0864)		
Absolute Margin x Born 0-6 Months before Scheduled Election		-0.317**		
		(0.152)		
Born 0-12 Months before Scheduled Election			0.0693*	0.166**
			(0.0418)	(0.0766)
Absolute Margin x Born 0-12 Months before Scheduled Election				-0.199
				(0.140)
Absolute Margin		-0.0555		-0.0536
		(0.0652)		(0.0669)
Observations	56140	56140	56140	56140
r2	0.493	0.493	0.493	0.493

Notes: Standard errors in parentheses. Each column represents a separate regression. The dependant variable is the number of antenatal visits. Columns 1 and 3 report the coefficients on dummies for children born 0-6 months and 0-12 months before scheduled elections. Columns 2 and 4 report the coefficients on dummy variables indicating whether a child is born 0-6 or 0-12 months before scheduled elections and interactions between the election dummy and the absolute margin of victory of the ruling party/coalition in the previous election. Columns 2 and 4 also report the coefficient on the absolute margin of victory variable. In addition to the reported variables, all regressions include district fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child, mother's and father's year of schooling and dummies for rural residence, membership in SC/ST. Other controls include average district turnout, real state domestic product per capita lagged by two years and month of polling dummies. Sample includes children born in the period 1987-1992 and 1995-1998 from 14 major states in India. Errors are clustered at district level.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 9: Tetanus during pregnancy

	(1)	(2)	(3)	(4)
	0-6 months before		0-12 months before	
Born 0-6 Months before Scheduled Election	0.0184**	0.0511***		
	(0.00844)	(0.0150)		
Absolute Margin x Born 0-6 Months before Scheduled Election		-0.0704**		
		(0.0296)		
Born 0-12 Months before Scheduled Election			0.00504	0.0275**
			(0.00743)	(0.0115)
Absolute Margin x Born 0-12 Months before Scheduled Election				-0.0494**
				(0.0200)
Absolute Margin		0.00327		0.00450
		(0.0146)		(0.0149)
Observations	62004	62004	62004	62004
r2	0.262	0.262	0.262	0.250

Notes: Standard errors in parentheses. Each column represents a separate regression. The dependant variable is a dummy indicating whether the mother had at least one tetanus injection during pregnancy. Columns 1 and 3 report the coefficients on dummies for children born 0-6 months and 0-12 months before scheduled elections. Columns 2 and 4 report the coefficients on dummy variables indicating whether a child is born 0-6 or 0-12 months before scheduled elections and interactions between the election dummy and the absolute margin of victory of the ruling party/coalition in the previous election. Columns 2 and 4 also report the coefficient on the absolute margin of victory variable. In addition to the reported variables, all regressions include district fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child, mother's and father's year of schooling and dummies for rural residence, membership in SC/ST. Other controls include average district turnout, real state domestic product per capita lagged by two years and month of polling dummies. Sample includes children born in the period 1987-1992 and 1995-1998 from 14 major states in India. Errors are clustered at district level.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 10: Low Birth Weight

	(1)	(2)	(3)	(4)
	0-6 months before		0-12 months before	
Born 0-6 Months before Scheduled Election	-0.0214**	-0.0312*		
	(0.00848)	(0.0186)		
Absolute Margin x Born 0-6 Months before Scheduled Election		0.0195		
		(0.0313)		
Born 0-12 Months before Scheduled Election			-0.00363	-0.00797
			(0.00783)	(0.0152)
Absolute Margin x Born 0-12 Months before Scheduled Election				0.00891
				(0.0251)
Absolute Margin		-0.00423		-0.00370
		(0.0115)		(0.0118)
Observations	52817	52817	52817	52817
r2	0.0428	0.0429	0.0427	0.0427

Notes: Standard errors in parentheses. Each column represents a separate regression. The dependant variable is a dummy indicating whether a child is of low birth weight is the dependant variable. Columns 1 and 3 report the coefficients on dummies for children born 0-6 months and 0-12 months before scheduled elections. Columns 2 and 4 report the coefficients on dummy variables indicating whether a child is born 0-6 or 0-12 months before scheduled elections and interactions between the election dummy and the absolute margin of victory of the ruling party/coalition in the previous election. Columns 2 and 4 also report the coefficient on the absolute margin of victory variable. In addition to the reported coefficients, all regressions include district fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child, mother's and father's year of schooling and dummies for rural residence, membership in SC/ST. Other controls include average district turnout, real state domestic product per capita lagged by two years and month of polling dummies. Sample includes children born in the period 1987-1992 and 1995-1998 from 14 major states in India. Errors are clustered at district level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 11: Robustness check: If election was held before actual election

	(1)	(2)	(3)	(4)	(5)	(6)
	12 months		24 months		36 months	
Born 0-12 Months before Election	-0.450	0.0558	0.427	-0.543	-0.129	0.0317
	(0.468)	(0.687)	(0.483)	(0.752)	(0.476)	(0.714)
Absolute Margin x Born 0-12 Months before Elecion		-1.079		2.113		-0.330
		(1.130)		(1.354)		(1.213)
Absolute Margin		0.812		0.291		0.678
		(0.633)		(0.656)		(0.640)
Observations	136200	136200	136200	136200	136200	136200
r2	0.397	0.397	0.397	0.397	0.397	0.397

Notes: Standard errors in parentheses. Each column represents a separate regression. Infant mortality is the dependant variable. Columns 1, 3 and 5 report the coefficients on dummies for children born 0-12 months before scheduled elections if the scheduled election was held 12 months, 24 months and 36 months before the actual scheduled election respectively. Columns 2, 4 and 6 report the coefficients on dummy variables indicating whether a child is born 0-12 months before scheduled elections and interactions between the election dummy and the absolute margin of victory of the ruling party/coalition in the previous election. Columns 2, 4 and 6 also report the coefficient on the absolute margin of victory variable. In addition to the reported variables, all regressions include mother's fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child. Other controls include average district turnout, real state domestic product per capita lagged by two years and dummies for the month of polling. Sample includes children born in the period 1975-1998 from 14 major states in India, excluding children born 0-12 months before actual scheduled election. Errors are clustered at district level.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 12: Probability of birth of female child

	(1)	(2)	(3)	(4)
	0-6 months before		0-12 months before	
Born 0-6 Months before Scheduled Election	-0.00648	-0.0211		
	(0.00786)	(0.0134)		
Absolute Margin x Born 0-6 Months before Scheduled Election		0.0298		
		(0.0207)		
Born 0-12 Months before Scheduled Election			-0.00442	-0.00674
			(0.00665)	(0.0104)
Absolute Margin x Born 0-12 Months before Scheduled Election				0.00507
				(0.0169)
Absolute Margin		-0.0157*		-0.0133
		(0.00866)		(0.00882)
Observations	175804	175804	175804	175804
r2	0.314	0.314	0.314	0.314

Notes: Standard errors in parentheses. Each column represents a separate regression. Dependant variable is a dummy equal to 1 if the child is female. Columns 1 and 3 report the coefficients on dummies for children born 0-6 months and 0-12 months before scheduled elections. Columns 2 and 4 report the coefficients on dummy variables indicating whether a child is born 0-6 or 0-12 months before scheduled elections and interactions between the election dummy and the absolute margin of victory of the ruling party/coalition in the previous election. Columns 2 and 4 also report the coefficient on the absolute margin of victory variable. In addition to the reported variables, all regressions include mother's fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child. Other controls include average district turnout, real state domestic product per capita lagged by two years and dummies for the month of polling. Sample includes children born in the period 1975-1998 from 14 major states in India. Errors are clustered at district level.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 13: Excluding Kerala

	(1)	(2)	(3)	(4)
	Including Kerala		Excluding Kerala	
	0-12 months before	0-6 months before	0-12 months before	0-6 months before
Born 0-12 Months before Scheduled Election	-1.194***		-1.284***	
	(0.351)		(0.365)	
Born 0-6 Months before Scheduled Election		-1.035**		-1.081**
		(0.419)		(0.430)
Observations	175804	175804	170391	170391
r2	0.341	0.341	0.340	0.340

Notes: Standard errors in parentheses. Each column represents a separate regression. Infant mortality is the dependant variable. Columns 1 and 2 report results including Kerala, the state where infant mortality is significantly lower than the average infant mortality over the sample. Columns 2 and 4 report results excluding Kerala from the sample. Columns 1 and 3 report coefficients on dummies indicating whether the child is born 0-12 months before scheduled election. Columns 2 and 4 report coefficients on dummies for children born 0-6 months before scheduled election. Apart from the reported variables all regressions include mother's fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child. Other controls include average district turnout, real state domestic product per capita and month of polling dummies. Errors are clustered at district level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 14: Election and Infant Mortality (all states)

	(1)	(2)	(3)	(4)
	Politically Competitive States		All States	
Born 0-12 Months before Scheduled Election	-1.194***	-1.137***	-0.675*	-0.554
	(0.351)	(0.398)	(0.367)	(0.414)
Born 12-24 Months before Scheduled Election		0.0866		0.250
		(0.390)		(0.380)
Born 1-12 Months after Scheduled Election		0.371		0.589
		(0.436)		(0.460)
Born 12-24 Months after Scheduled Election		-0.203		-0.133
		(0.469)		(0.440)
Observations	175804	175804	185976	185976
r2	0.341	0.341	0.343	0.343

Notes: Standard errors in parentheses. Each column represents a separate regression. Infant mortality is the dependant variable. The sample used in regressions corresponding to columns 1 and 2 include data from 14 major politically competitive states in India (details in section 6.4). Columns 3 and 4 include all 15 major states in India. The coefficients reported correspond to dummies for children born before and after scheduled elections. In addition to the reported coefficients, all regressions include mother's fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child. Other controls include average district turnout, real state domestic product per capita lagged by two years and dummies for month of polling. Errors are clustered at district level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 15: Role of Political Competition (all states)

	(1)	(2)	(3)	(4)
	0-12 months before		0-6 months before	
	Baseline	With Interactions	Baseline	With Interactions
Born 0-12 Months before Scheduled Election	-0.675*	-1.532**		
	(0.367)	(0.613)		
Absolute Margin x Born 0-12 Months before Scheduled Election		1.761*		
		(0.967)		
Born 0-6 Months before Scheduled Election			-0.655	-1.958**
			(0.432)	(0.803)
Absolute Margin x Born 0-6 Months before Scheduled Election				2.594*
				(1.326)
Absolute Margin		-0.100		-0.0883
		(0.479)		(0.475)
Observations	185976	185976	185976	185976
r2	0.343	0.343	0.343	0.343

Notes: Standard errors in parentheses. Each column represents a separate regression. Infant mortality is the dependant variable. Columns 1 and 3 report coefficients on dummies for children born 0-6 months and 0-12 months before scheduled elections. Columns 2 and 4 report the coefficients on dummy variables indicating whether a child is born 0-6 or 0-12 months before scheduled elections and interactions between the election dummy and the absolute margin of victory of the ruling party/coalition in the previous election. Columns 2 and 4 also report the coefficient on the absolute margin of victory variable. In addition to the reported variables, all regressions include mother's fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child. Other controls include average district turnout, real state domestic product per capita lagged by two years and dummies for the month of polling. Sample includes children born in the period 1975-1998 from 15 major states in India. Errors are clustered at district level.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table 1: Elections and Infant Mortality (changing omitted category)

	(1)	(2)	(3)	(4)
Born 0-12 Months before Scheduled Election	-1.137***	-1.313***	-1.606***	-1.059**
	(0.398)	(0.432)	(0.467)	(0.501)
Born more than 24 Months before Scheduled Election		-0.220	-0.520	0.0395
		(0.376)	(0.424)	(0.456)
Born 12-24 Months before Scheduled Election	0.0866		-0.390	0.160
	(0.390)		(0.424)	(0.520)
Born 1-12 Months after Scheduled Election	0.371	0.198		0.469
	(0.436)	(0.422)		(0.488)
Born 12-24 Months after Scheduled Election	-0.203	-0.376	-0.638	
	(0.469)	(0.521)	(0.494)	
Observations	175804	175804	175804	175804
r2	0.341	0.341	0.341	0.341

Notes: Standard errors in parentheses. Each column represents a separate regression. Infant mortality is the dependant variable. The coefficients reported correspond to dummies for children born before and after scheduled elections. The omitted category in the regression corresponding to Column 1 is a dummy indicating children born more than 24 months before scheduled elections. The omitted category in the regression corresponding to Column 2 is a dummy indicating whether a child is born 12-24 months before scheduled election. The omitted category in the regression corresponding to Column 3 is a dummy indicating whether a child is born 1-12 months after scheduled elections. The omitted category in the regression corresponding to Column 4 is a dummy indicating whether the child is born 12-24 months after scheduled election. Apart from the reported coefficients, all regressions include mother's fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child. Other controls include average district turnout, real state domestic product per capita and month of polling dummies. Sample includes children born in the period 1975-1998 from 14 major states in India. Errors are clustered at district level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table 2: Elections and Infant Mortality (with current GDP as control)

	(1) Lagged GDP	(2) Lagged GDP	(3) Current GDP	(4) Current GDP
Born 0-12 Months before Scheduled Election	-1.194***	-1.137***	-1.136***	-1.034***
	(0.351)	(0.398)	(0.349)	(0.397)
Born 12-24 Months before Scheduled Election		0.0866		0.227
		(0.390)		(0.394)
Born 0-12 Months after Scheduled Election		0.371		0.429
		(0.436)		(0.434)
Born 12-24 Months after Scheduled Election		-0.203		-0.158
		(0.469)		(0.467)
Observations	175804	175804	175804	175804
r2	0.341	0.341	0.341	0.341

Notes: Standard errors in parentheses. Each column represents a separate regression. Infant mortality is the dependant variable. While the regressions presented in columns 1 and 2 include real state GDP per capita lagged by two years as a control; the regressions presented in columns 3 and 4 include contemporaneous real state GDP per capita as a control. The coefficients reported correspond to dummies for children born before and after scheduled elections. In addition to the reported coefficients, all regressions include mother's fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child. Other controls include average district turnout, and month of polling dummies. Sample includes children born in the period 1975-1998 from 14 major states in India. Errors are clustered at district level.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table 3: Elections and Infant Mortality (Including Multiple births)

	(1)	(2)	(3)	(4)
	Only single births		Both single and multiple births	
Born 0-12 Months before Scheduled Election	-1.194***	-1.137***	-1.311***	-1.226***
	(0.351)	(0.398)	(0.354)	(0.404)
Born 12-24 Months before Scheduled Election		0.0866		0.177
		(0.390)		(0.402)
Born 1-12 Months after Scheduled Election		0.371		0.314
		(0.436)		(0.439)
Born 12-24 Months after Scheduled Election		-0.203		-0.0585
		(0.469)		(0.481)
Observations	175804	175804	178169	178169
r2	0.341	0.341	0.339	0.339

Notes: Standard errors in parentheses. Each column represents a separate regression. Infant mortality is the dependant variable. The sample used in regressions corresponding to columns 1 and 2 include only the single births. Columns 3 and 4 include multiple births in addition to single births. The coefficients reported correspond to dummies for children born before and after scheduled elections. In addition to the reported coefficients, regressions include mother's fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child. Other controls include average district turnout, real state domestic product per capita lagged by two years and dummies for month of polling. Errors are clustered at district level.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table 4: Elections and Infant Mortality (Including NFHS I)

	(1) 0-12 Months Before	(2) 0-6 Months Before	(3) 0-12 Months Before	(4) 0-6 Months Before
Born 0-12 Months before Scheduled Election	-1.194***		-0.873***	
	(0.351)		(0.277)	
Born 0-6 Months before Scheduled Election		-1.035**		-0.866**
		(0.419)		(0.338)
Observations	175804	175804	318535	318535
r2	0.341	0.341	0.355	0.355

Notes: Standard errors in parentheses. Each column represents a separate regression. Infant mortality is the dependant variable. The individual level data used for estimating regressions corresponding to columns 1 and 2 come from NFHS II. The sample used in columns 2 and 4 report come from both NFHS I and NFHS II. Columns 1 and 3 report coefficients on dummies indicating whether the child is born 0-12 months before scheduled election. Columns 2 and 4 report coefficients on dummies for children born 0-6 months before scheduled election. In addition, all regressions include mother's fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child. Other controls include average district turnout, real state domestic product per capita and month of polling dummies. Sample includes children born in the period 1975-1998 from 14 major states. Errors are clustered at district level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table 5: Presence of Doctor During Delivery

	(1)	(2)	(3)	(4)
	0-6 months before		0-12 months before	
Born 0-6 Months before Scheduled Election	0.00190	0.103**		
	(0.0299)	(0.0471)		
Absolute Margin x Born 0-6 Months before Scheduled Election		-0.203**		
		(0.0935)		
Born 0-12 Months before Scheduled Election			-0.0194	-0.0372
			(0.0190)	(0.0295)
Absolute Margin x Born 0-12 Months before Scheduled Election				0.0461
				(0.0542)
Absolute Margin		-0.0341		-0.0358
		(0.0268)		(0.0268)
Observations	13977	13977	13977	13977
r2	0.366	0.366	0.366	0.366

Notes: Standard errors in parentheses. Each column represents a separate regression. The dependant variable is a dummy indicating whether a child is of low birth weight is the dependant variable. Columns 1 and 3 report the coefficients on dummies for children born 0-6 months and 0-12 months before scheduled elections. Columns 2 and 4 report the coefficients on dummy variables indicating whether a child is born 0-6 or 0-12 months before scheduled elections and interactions between the election dummy and the absolute margin of victory of the ruling party/coalition in the previous election. Columns 2 and 4 also report the coefficient on the absolute margin of victory variable. In addition to the reported coefficients, all regressions include district fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child, mother's and father's year of schooling and dummies for rural residence, membership in SC/ST. Other controls include average district turnout, real state domestic product per capita lagged by two years and month of polling dummies. Sample includes children born in the period 1995-1998 from 14 major states in India. Errors are clustered at district level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table 6: Mechanisms (All states)

	(1)	(2)	(3)	(4)	(5)	(6)
	Antenatal Visits		Tetanus during Pregnancy		Low Birth Weight	
Born 0-6 Months before Scheduled Election	0.294***		0.0489***		-0.0280	
	(0.0843)		(0.0150)		(0.0181)	
Absolute Margin x Born 0-6 Months before Scheduled Election	-0.318**		-0.0746**		0.0120	
	(0.150)		(0.0292)		(0.0307)	
Born 0-12 Months before Scheduled Election		0.176**		0.0256**		-0.00733
		(0.0748)		(0.0114)		(0.0149)
Absolute Margin x Born 0-12 Months before Scheduled Election		-0.204		-0.0511**		0.00352
		(0.138)		(0.0197)		(0.0247)
Absolute Margin	-0.0464	-0.0441	0.00229	0.00314	-0.00269	-0.00201
	(0.0647)	(0.0663)	(0.0147)	(0.0149)	(0.0114)	(0.0118)
Observations	59337	59337	65660	65660	56013	56013
r2	0.487	0.487	0.265	0.252	0.0413	0.0412

Notes: Standard errors in parentheses. Each column represents a separate regression. The dependant variable in columns 1 and 2 is the number of antenatal visits made by the mother during pregnancy. The dependant variable in columns 3 and 4 is a dummy indicating whether the mother had at least one tetanus injection during pregnancy. The dependant variable in columns 5 and 6 is a dummy indicating whether a child is of low birth weight. The table reports coefficients on dummy variables indicating whether a child is born 0-6 or 0-12 months before scheduled elections and interactions between the election dummy and the absolute margin of victory of the ruling party/coalition in the previous election. The coefficient on the absolute margin of victory variable is also reported. In addition to the reported coefficients, all regressions include district fixed effect, dummies for year of birth, month of birth, order of birth, sex of the child, mother's and father's year of schooling and dummies for rural residence, membership in SC/ST. Other controls include average district turnout, real state domestic product per capita lagged by two years and month of polling dummies. Sample includes children born in the period 1987-1992 and 1995-1998 from 14 major states in India. Errors are clustered at district level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$