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Synchronized Elections, Voter Behavior and Governance Outcomes: Evidence from India

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Abstract

We examine whether holding national and state elections simultaneously or sequentially affects voter decisions and consequently, electoral and economic outcomes in India. Synchronized elections increase the likelihood of the same political party winning constituencies in both tiers by 21%. It reduces split-ticket voting, increases the salience of party among voters and shifts voters' priority to state issues, without significantly affecting turnout and winning margin. A model of behaviorally constrained voters with costly information acquisition best explains our results. Finally, synchronization results in insignificant economic gains. Our findings have implications for the design of elections to multiple tiers of government.

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1 Introduction

Elections for multiple tiers of government take place on the same day in several countries.[1] The recent demand for synchronizing elections in India as well as the European Union – primarily motivated by its administrative ease and potentially positive effects on policymaking – has kindled the need to understand whether the timing of elections matter for electoral outcomes.[2] The academic debates so far have ignored whether the question of *when* voters make decisions about their representatives (i.e., simultaneously or sequentially) may affect *how* they make these choices and consequently, the outcomes that emerge from the choices[3]. In this paper, we address this issue by examining whether synchronized elections in India lead to significant changes in voter behavior, and consequently, in electoral and economic outcomes. We refer to elections in India as synchronized if the national election (or the general election, GE) and the state election (or, assembly election, AE) occur on the same day, making voters decide candidates on two separate ballots in the same polling station (booth), at the same time, and non-synchronized otherwise.

India is a natural context to study this question for several reasons. Apart from the ongoing policy relevance of this question, in India both the national and state elections have high stakes and do not have any obvious hierarchy in prominence. This is unlike the contexts of US and Europe where researchers have studied concurrence between a more prominent election and a less prominent one. Such synchronization involves significant changes in turnout. Therefore, any effect on the electoral outcomes in such contexts is likely to be driven by the "new" voters in synchronized elections. In the Indian context, turnout remains largely unaffected due to synchronization. Therefore, it is easier to attribute the effects on electoral and economic outcomes to changes in voter behavior due

[1] The "election day" in the United States is one such example where elections for various levels of government occur on the same day. Brazil, South Africa, Sweden, and Indonesia are other examples with synchronized elections.

[2] For EU, synchronization refers to having the national elections of EU countries on the same day as the EU Parliamentary elections (VoxEU: European Parliament Elections). For India, the incumbent central government plans to synchronize the national and state legislative elections (Daniyal (2019)).

[3] Various administrative bodies, including the Law Commission of India, entrusted with the responsibility of deliberating on this issue, highlight that conducting elections is an expensive exercise in India and find that "holding simultaneous elections would be ideal as well as desirable" in the Indian context (Law Commission of India, 2018).

to synchronization. Moreover, Indian data has natural variation in national and state election cycles that generate synchronized or non-synchronized elections across many Indian states, and over the years. In any GE year, only a subset of states are up for their AEs, and can potentially have synchronized elections.[4] Moreover, the national and state governments sometimes do not complete their full term in office and go for an early election, thereby contributing to changes in synchronization status over time for different states. We use these variations to identify the effect of synchronization on electoral outcomes. Finally, existing work does not separate out synchronization effect from *proximity effect*, i.e., effect of having the two non-syncrhonized elections in close succession. The Indian context allows us to isolate the two phenomena.

Indian elections, following the parliamentary system, elect representatives to the national parliament from parliamentary constituencies (PCs) and representatives to the state legislature from state assembly constituencies (ACs) within a state.[5] A PC contains several ACs, and a single PC subsumes any AC. Our primary outcome variable for this study, at the level of PC-AC pair, is an indicator that takes value one if the same political party wins the AC in the state elections, and PC in the national elections, and zero otherwise.[6] For identification, we examine the same PC over time and compare outcomes between synchronized elections and elections that occur very close to each other, i.e., *within 180 days of each other*. By making the comparison between synchronized and non-synchronized, but proximate elections, we rule out proximity as a potential explanation and attempt to get closer to a causal interpretation of our findings. We discuss these issues in greater detail in Section 3.1.

We find that synchronized elections increase the probability that same the political party wins a seat at the parliament and the state assembly by 0.089, which is about 21% of the base probability of 0.42.[7] The result is robust to a host of tests, such as introducing PC and AC level time trends, removing from

[4] India observes on average five state assembly elections in any year.

[5] There are 543 PCs and roughly $4,300$ ACs in all of India.

[6] We pair a national election with state elections that happened after it and before the next national election. Our results do not change if we pair a national election with the closest state election, either before or after.

[7] To avoid concerns that our estimates are sensitive to the choice of the time window to define proximate elections, we vary the time gap between the elections in any given pair of national and state elections from 150 days to 270 days. Our estimates range from 0.15 (for 150 days) to 0.082 (for 270 days). The estimates are not statistically significantly different from each other.

sample state elections due to strategic dissolution of the government, performing randomized inference and other robustness checks. Finally, we explicitly rule out the possibility that this is a proximity effect. We show that when we compare non-synchronized elections held within 90 days of each other with those held within 120 to 180 days, we find no difference between the outcomes, suggesting that there is something important about elections taking place on the same day.

Interestingly, state and regional parties, rather than national parties, drive the synchronization effect.[8] Exploring heterogeneity by incumbency, we find that the state government incumbent parties experience an increase in the probability of winning both tiers when elections are synchronized, while national government incumbents do not.

There are several rational and more conventional mechanisms that can explain our result. If, for example, voters have non-separable preferences over candidates across elections, i.e., if a voter's preference over candidates in one election is contingent on the winner in the other election (Ahn and Oliveros, 2012), then it may explain why synchronized elections lead to a higher correlation between electoral outcomes across elections. Nellis (2016), however, shows that these preferences are strong and positive for one national party in India (the Bharatiya Janata Party, BJP) and *negative* for another (the Indian National Congress, INC). For rational non-separable preferences to explain our result, our estimates should be starkly different for the BJP and the INC. However, we find no such pattern in the data, thereby discounting this as the primary mechanism behind our findings. We also rule out cross-tier incumbency (voters displaying anti-incumbency across tiers in sequential contests) as an explanation by showing that the effect does not increase when we increase the time window for non-synchronized elections (allowing greater anti-incumbency to kick in). Further, we show that coattail effects (popular candidates in a prominent election driving voters to vote for the same party in the less prominent election) also do not explain our result.

While leading rational explanations do not find support in our data, to systematically evaluate behavioral explanations of our result, we set up a model of voting choice in single elections, sequential elections and synchronized elec-

[8] Indian political parties are heterogeneous and vary in the geographic region in which they operate. In such a multi-party system, there are a few national parties, and several regional or state-level political parties.

tions. The model takes inspiration from the theory of salience proposed by Bordalo et al. (2012, 2013, 2015) to explain the behavior of various agents (such as consumers, or judges) that get influenced by certain salient features of the objects in the choice set.

We assert that while voters may care both about the party and candidates' personal characteristics, it is not equally easy to acquire information about both. It may be relatively easier or cheaper to find out the party affiliations of candidates compared to knowing other aspects of the candidates' characteristics (such as his in-group bias, other aspects of his personality, and political connections). In the Indian context, we believe this is a reasonable description of the environment, given that the party is an important and salient feature of candidates during election campaigns. Therefore, a voter would acquire the information about candidates' personal characteristics only if it can potentially change her vote relative to her decision based on the party affiliations of candidates alone. A voter who does not acquire the information, therefore, chooses to vote based solely on the party affiliations of candidates, i.e., in her *rationale* for voting political party effectively becomes more salient (compared to her true preference); we refer to this as her "party rationale." A voter who acquires the information votes based on her true preference, i.e., adopts a "preference rationale" for voting. In case of sequential elections, a voter's rationale choice and the consequent voting decision remains independent across elections. However, in simultaneous elections, the decisions may get linked if the voters are behaviorally constrained to have only one thought process or rationale across both elections.[9]

Our model delivers three key predictions. First, the voters increase the salience of parties in their voting decisions during simultaneous elections. Second, given this party salience, the fraction of voters who engage in split-ticket voting (choosing two different parties in two elections) decreases in synchronized elections. Finally, the probability that a party wins both elections is higher when synchronized than when sequentially held.

The final prediction of our model is the central empirical result of our paper. Empirical tests of the other predictions, however, are not possible with aggregate election data. We, therefore, compile all the post-poll national and state

[9]We show that there is a mass of voters who would have chosen different rationales for the two elections, because the cost of acquiring information is different across elections. Faced with simultaneous elections, they have to choose one rationale across both elections.

election surveys conducted by the Center for the Study of Developing Societies between 1996-2018. These voter surveys conducted across a randomly selected sample of constituencies in every election round provide a wealth of information about voters' thought processes, as well as decisions. Consistent with our first prediction from the model, we show using this micro-data that voters are more likely to say that the party of a candidate is their most important aspect while voting in synchronized elections relative to non-synchronized ones. In line with the second prediction, we find that voters are 7 percentage points more likely to report that they voted for the same party across the national and state elections when held simultaneously. Additionally, we find that the voters are more likely to report that they consider the state-specific issues (as opposed to national issues) to be the primary set of issues in the elections during synchronized elections. The role of state-specific issues is consistent with our previous finding that state and regional parties primarily drive our main effect.

We finally examine the effect of synchronized elections and synchronized *representation*, i.e., the representatives across tiers belonging to the same political party – a consequence of synchronized elections – on economic activity. Previous works show that synchronized representation may generate positive economic gains for the constituency, for instance, through the transfer of additional public resources (e.g., as found by Rao and Singh (2003); Khemani (2003)) or easing of processes for investment through greater coordination across tiers of government. We measure economic activity in terms of night lights intensity (Asher and Novosad, 2017), and in terms of new capital investment projects under implementation and those completed in the constituency. We find a moderate 5% increase in night light from synchronized elections, and economically and statistically insignificant results in capital investment. Synchronized representation does not lead to any economic gains. The development consequences of synchronized elections, therefore, are not particularly significant.

Our work contributes to two strands of academic literature. It directly relates to the literature on concurrent elections, which typically has examined effects on turnout in elections (Garmann (2016); Cantoni and Gazze (2019); Rallings and Thrasher (2005); Schmid (2015)) and consequently on electoral outcomes.[10] Typically, such studies use as contexts elections in the US or Eu-

[10] Bracco and Revelli (2018) suggest that a synchronized election may hinder elections as a tool of accountability in higher-stakes elections. de Benedictis-Kessner (2018) find that in-

rope which are hierarchical in terms of prominence, such as Presidential and congressional elections in the US, or mayoral or local and national elections in European countries. Data limitations may drive such comparisons as variation in synchronization of relatively equal, high-level offices are hard to come by. We contribute to the literature by showing that synchronization of two equally high stake elections involves significant consequences for voter behavior – an important yet less explored consequence of synchronization, which further result in changes in electoral outcomes. It also speaks to the growing literature on information provision and political economy outcomes, especially in less developed democratic economies (e.g., Banerjee, Enevoldsen, Pande, and Walton, 2020; Larreguy, Marshall, and Snyder, 2018), which find that information about candidates or parties can shift voters' decisions by potentially making those feature more salient in their mind. We show that synchronization of elections can also induce a shift in voters' salience in favor of party affiliations of candidates.

Our findings are necessarily a partial equilibrium one. We estimate the effect on voter behavior and electoral outcome when one constituency (or some constituencies) is (are) synchronized at the margin, while others remain non-synchronized. We cannot extend this assessment of what might likely happen if India moves to a synchronized election regime, as there could be sizable general equilibrium effects as well. For instance, it could be that resource allocation towards election campaigning and candidate selection by parties may change significantly in response to such a regime change, which could amplify or attenuate the observed effect on outcomes, depending on the nature of the responses from parties. It could also alter the relative gains from synchronization for national vs regional parties due to differential resource constraints. We view our contribution, therefore, as a first step in the assessment of synchronized elections on governance and economic outcomes.

The rest of the paper is organized as follows. Section 2 provides the context to our study and describes the data. Section 3, presents our source of identification and estimation strategy. Section 4 documents the main results, Section 5 rules out rational explanations of our main result. Section 6 sets up the theoretical framework to explore a behavioral mechanism at play and then empirically

cumbency advantage of mayors in the US increases significantly when mayoral elections occur concurrently with national elections. Halberstam and Montagnes (2015) find that senators in the US is more likely to be ideologically extreme if elected during presidential elections as compared to mid-term elections.

tests its predictions. Section 7 examines the economic consequences of synchronized elections and representation, and finally, Section 8 concludes.

2 Background and Data

India follows a parliamentary system of governance with a first-past-the-post election system. The national or "general" elections in India occur in 543 single-member parliamentary constituencies (PCs henceforth). Similar to the national level, in each state, the state or "assembly" elections occur in single-member assembly constituencies (ACs henceforth) that elects Members of Legislative Assembly (MLAs) to the state assembly. The number of ACs varies across states of India; in aggregate, there are about 4300 ACs across all states of India.

Each AC, by design, is always subsumed within one PC. On average, across all years in our data, there are about 7 ACs within each PC[11]. The number of PCs and ACs and their boundaries are decided by the Delimitation Commission of India. We focus on national and state elections between the period 1977-2018, as India did not have any non-synchronized elections in its first few decades of elections. During our sample period, the constituency boundaries change only once in 2008.

The term for both the central and state governments is five years. A general election (GE) takes place at the national level and an assembly election (AE) in a state, every five years, unless there is a premature dissolution of the national parliament or the state assembly. For both general and assembly elections, the Election Commission of India (ECI, henceforth) has the sole authority to decide the exact schedule of voting across constituencies[12].

2.1 Compilation and Construction of Main Variables

The primary source of data for Indian elections is the ECI. The ECI reports for each national and state election comprises of the total votes for each candidate contested from a given constituency, the party affiliations of the candidates, number of nominations filed, the size of the electorate, overall turnout, number of polling stations and the date of the election. We use the publicly available

[11] In 2019, the average number of voters in each PC is about 1.6 million, while for each AC is about 238,000.

[12] Appendix Section A details the procedures for synchronized and non-synchronized elections in India.

repository of this information, cleaned and assembled by the Trivedi Center for Political Data (TCPD). We augment this data with the exact date for polls across all state and national elections in India from the Centre for Monitoring the Indian Economy (CMIE).

We map each AC to its PC for all elections conducted between 1977 and 2018, using data assembled by Jensenius (2015) and the delimitation commission report of 2002 that redrew the constituency boundaries for elections since May 2008.[13] By augmenting Jensenius (2015), we map each AC to its PC for all elections conducted between 1977 and 2018.

Our geographic unit of analysis is an AC (paired to the PC it falls under). Therefore, we define our primary explanatory variable - synchronization status of elections - at the level of an AC-PC pair, for each general election cycle. The synchronization status takes value one if the national and state elections for an AC-PC pair happen on the same day, and zero otherwise.[14] Our primary dependent variable is an indicator variable that takes value one if the same political party wins both the AC and its corresponding PC in the two elections, and zero otherwise.

In addition to the election data, we compile the post-poll election survey data from Lokniti, at the Center for the Study of Developing Societies, India. The Lokniti surveys give us detailed information about voter attitudes, preferences, policy priorities, and voting decisions just after the national and state elections (and before the results come out) for a representative sample of voters in a randomly selected sample constituencies. We were able to access the relevant sections of the national as well as state election survey data for all the rounds since the survey began in 1996 till 2018. A detailed description of this dataset is available in Appendix Section B. We compile the survey datasets and merge them with our election data. We use this data to examine the underlying patterns of voter decision making in India.

[13] The recommendations of the 1973 delimitation was under the 1972 Delimitation Act and came in force in 1976, while the 2002 delimitation was under the 2002 Delimitation Act and in effect from the May 2008 Karnataka state elections.

[14] An election pair is the closest state election after the national election. We test for robustness by relaxing the ordering assumption and find our results to be robust to the alternate definition.

2.2 Summary Statistics

Table 1 presents an overview of synchronized elections in India. Each row presents a national election year ("GE-Year"), and column (1) lists the various states that had synchronized elections in that GE-Year, and at least one non-synchronized election during our sample period. The states in bold-face represent those that had non-synchronized elections within 180 days of each other – a subsample we use later for identification of our empirical estimates. Nine of the 31 Indian states/union territories[15] have never had synchronized elections.[16] Column (2) presents the share of PCs that had synchronized elections with state elections in each round of the national election. National elections in 1991 had the highest share of synchronized elections for PCs (33%), whereas those in 1998, 1977, and 1980 had the lowest share of less than 7%. As a share of the total electorate in India, 16.3% of the Indian electorate faced synchronized elections on average, and this number varies between 3.5% (1977) and 35.1% (1991). On the whole, we have 21 states in our sample, ten national elections, and 169 state/union territory elections in our data. These summary statistics go to show that far from being an infrequent occurrence, there is a sufficient variation in synchronized elections across electoral cycles that we seek to use.

In Table 2, we provide a general overview of electoral characteristics for state assembly elections (Panel A) and national elections (Panel B). On average there are about 10 candidates for each constituency in the state elections (5 political party candidates and 5 independent candidates) and 13 candidates for each constituency the national elections (5 political party candidates and 8 independent candidates). Both elections have an average turnout of about 58% and an 8% average win margin. The effective number of parties[17] in each contest is about 3. The electorate size in a PC is just about 1 million, each AC on average has about 1/6th of the PC's electorate.

[15] Union territories are federal territories governed directly by the national government of India. However, two union territories – Delhi and Puducherry – hold elections for a local government, and we observe in our sample.

[16] These states are Bihar, Chhattisgarh, Delhi, Jammu and Kashmir, Jharkhand, Madhya Pradesh, Manipur, Rajasthan and Uttarakhand.

[17] ENOP: effective number of parties is the number of parties in each constituency weighted by the vote share in the election, computed as the inverse of the sum of squares of vote shares for each party.

Table 1—Elections in India

GE-Year	Synchronized States	Share of PCs Synchronized	Share of Electorate Synchronized
	(1)	(2)	(3)
1977	KL	0.03	0.035
1980	**AR**, KL, **PU**	0.04	0.038
1989	AP, GO, KR, MZ, NL, SK, **UP**	0.30	0.308
1991	AS, **HR**, KL, **PB**, **PU**, **UP**, WB	0.33	0.351
1996	AS, **HR**, KL, **PU**, **TN**, WB	0.22	0.214
1998	**GJ**, **HP**, ML, NL, TP	0.06	0.059
1999	AP, **AR**, KR, **MH**, SK	0.22	0.226
2004	AP, KR, **OD**, SK	0.17	0.172
2009	AP, **OD**, SK	0.11	0.119
2014	AP, **AR**, **OD**, SK	0.12	0.114

Notes: State codes: Andhra Pradesh (AP), Arunachal Pradesh (AR), Goa (GO), Haryana (HR), Himachal Pradesh (HP), Karnataka (KR), Maharashtra (MH), Meghalaya (ML), Mizoram (MZ), Kerala (KL), Nagaland (NL), Odisha (OD), Puducherry (PU), Punjab (PB), Tamil Nadu (TN), Tripura (TP), Uttar Pradesh (UP), West Bengal (WB). The 1991 GE-Year also includes Assam and Punjab for which the general elections were held in 1992. The state codes in bold represent the states which had at least one synchronized and at least one unsynchronized election within 180 days of the general election. The state which have never been synchronized are: Bihar, Chhattisgarh, Delhi, Jammu and Kashmir, Jharkhand, Madhya Pradesh, Manipur, Rajasthan and Uttarakhand.

Table 2—Summary Statistics

	Mean	SD	Min	Max
	(1)	(2)	(3)	(4)
Panel A: State Elections				
Size of Electorate (in thousands)	157.95	75.96	3.48	1494.09
Number of Contestants	10.34	7.59	1	264
Number of Parties	5.01	3.50	0	222
Effective # of Parties (ENOP)	3.03	1.00	1	10
Turnout	0.592	0.13	0.00	0.96
Win Margin	0.08	0.07	0.00	0.68
Panel B: National Elections				
Size of Electorate (in thousands)	978.28	330.30	115.01	3240.34
Number of Contestants	13.14	11.28	2	79
Number of Parties	5.36	2.57	2	15
Effective # of Parties (ENOP)	2.83	0.76	1.47	5.56
Turnout	0.57	0.11	0.09	0.84
Win Margin	0.08	0.07	0.00	0.35

Notes: This table presents summary statistics across a number of electoral variables. The sample includes assembly elections that happen within 180 days after the general election.

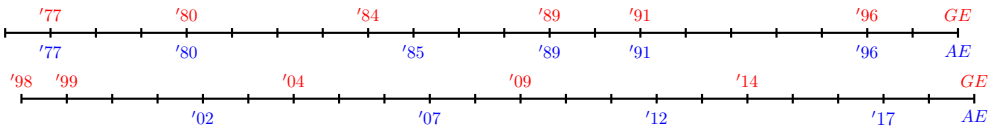
3 Empirical Strategy

3.1 Identification

Our identification strategy relies on exploiting the natural variation in the electoral cycles of the states and the central government that led to changes in the synchronization status of elections. There are two sources of this variation. First, electoral cycles are different for different states for the sample period. Only some states are up for elections in the year of a national election, and can potentially be synchronized, giving us across state variation in synchronization. Moreover, the central government, as well as some state governments, fail to complete their full terms in office at various points in our sample period. The shorter terms of office result in changes to the synchronization status of elections for the same AC-PC pair.[18] Such changes give us within state variation in synchronization over time.

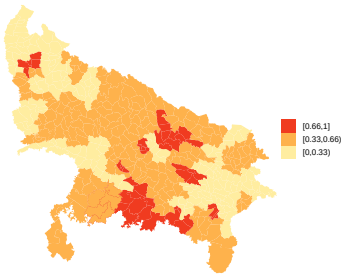
Figure 1. Standard Approach: Uttar Pradesh

Panel A: GE and AE Years

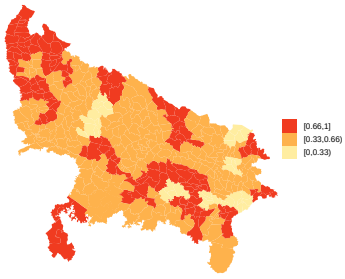


Panel B: Prob (Same Party winning both PC and AC)

(a) Case I: Sync = 0



(b) Case II: Sync = 1



In our estimation we compare outcomes within a PC over time. We use

[18] Synchronization status can change because of early dissolution of either the state government or the central government or both.

changes in the status of synchronization of the same PC across GE years to estimate the treatment effect. In this approach, we only consider the states that ever experienced such changes in the treatment status during our period of study. There are 21 such states.[19] We explain this standard approach using the case of Uttar Pradesh. Panel A of Figure 1 shows the general and assembly election years for the state. Initially, the GE and AE happened in the same years for the state. However, over time, elections occurred a year or more apart from each other. Under the standard approach, we compare outcomes for the same AC-PC pair across years when the elections were synchronized and when they were not. Panel B shows a heat map for the main outcome variable of our interest - the probability of the same party winning both the AC and the PC. We see that when the elections are synchronized, the probability indeed increases (more number of darker color constituencies) compared to when elections are non-synchronized.

However, this comparison does not take into account that not all non- synchronized elections are same. For the non-synchronized elections, the time gap between them can range from being a few months to a few years years. Parties may strategize, allocate resources and choose candidates very differently faced with elections in quick successions, as opposed to facing them far apart from each other. Therefore, non-synchronized elections that are *proximate* may be different from those that are not. Moreover, they may share some common features with synchronized elections as the parties and governments face similar conditions when elections happens on the same day. Hence, the synchronization effect under the above-mentioned approach would subsume the "proximity effect" as well.

We address the issue by restricting the time gap between national and state elections to 180 days when they are non-synchronized. Therefore, we compare the same constituency over time and compare periods when the two elections occurred on the same day (synchronized) to periods when they occurred proximately, i.e., within 1-180 days of each other (non-synchronized).[20] We therefore argue that for a given constituency, within the pool of elections that happened within 180 days from each other, any differences in outcomes between synchronized and non-synchronized elections results from voters having to vote in the

[19] In the rest of the states, elections were either always synchronized or non-synchronized during 1977-2018.

[20] We show the robustness of our results to higher and lower cut-off days.

two elections *simultaneously* as opposed at two different points in time. The restriction of 180 days reduces the number of states in our sample. There are 10 states where the two elections were synchronized at least once and happened within 180 days of each other when they were non-synchronized.

3.2 Estimation

Our main regression specification to estimate the effect of synchronization on an outcome variable y is as follows:

$$y_{a,p,s,t} = \mu_p + \mu_t + \gamma I(\text{Sync} = 1)_{s,t} + \beta' X_{a,p,s,t} + \epsilon_{a,p,s,t} \tag{1}$$

where y is the outcome variable at an AC (a) and PC (p), in state s at a national election year t. For example, $y = I(\text{Same Party} = 1)$, a dummy variable if the party elected to power in the election at an AC a, in a given PC p, is the same. Our dataset comprises of election-pairs at the AC level.

The crucial right hand side variable is $I(\text{Sync} = 1)_{s,t}$ which takes the value 1 if the state election in the state (s) during the national election year (t) was synchronized, and zero otherwise. $X_{a,p,s,t}$ includes a vector of controls that consist of dummy for reservation status[21] for AC and PC and their interaction. The nature of our dataset is such that it is difficult to include additional controls that vary at the AC/PC level. However, as we discuss later, for a sub-sample, we use the data from SHRUG (Asher et al. (2019)) to augment more controls, to check for the robustness of our estimates. The coefficient γ identifies the change in the probability that the same political party wins both national and state electoral constituencies when elections are synchronized.

We include the PC fixed effects (μ_p) to account for unobserved differences across various PCs within each state and allows us to study the outcome variable within each PC. The inclusion of national election (GE) year fixed effects (μ_t) capture any differences particular to each national election cycle, such as presence of popular national leaders (such as Indira Gandhi or Narendra Modi), or nationally important and politically salient events (such as demolition of Babri Masjid in 1992) affecting the outcome variables. The standard errors are clus-

[21] Both state and central government have seats reserved for the historically disadvantaged Scheduled Caste and Scheduled Tribes, defined by law – in proportion to their population in the census. The reservation of the AC and PC are indicated and modified by an independent Delimitation Commission.

tered at the level of state - GE year combinations, to account for the fact that synchronization occurs for a state at a given national election cycle. The observations are also weighted by the size of electorate for the AC since the electorate numbers change over time, and across elections.[22]

One concern with our empirical strategy could be that synchronized and non-synchronized elections happen at different points in time for the same PC which makes it difficult to attribute the effect to synchronization alone. However there is no time trend in synchronization, as Table 1 shows; different states had a synchronized or unsynchronized state election each with a different national election. As additional robustness, we include PC level time-trends and AC level time-trends to account for any observable or unobservable differences between the same constituency over time.[23]

On a subsample of data, we show balance statistics for a number of demographic characteristics of ACs and PCs in Appendix Table A1 using the same specification equation 8. We find minimal difference between the control and treatment, except for urban area, which is much larger in synchronized constituencies. We later show robustness of our results to including them as controls in our specification.

4 Results

Main Results: Our main outcome of interest is whether there is a differential probability of the same political party winning both parliamentary and assembly constituencies in the event of synchronized national and state elections. Table 3 presents the results.

The first three columns of Table 3 presents the full sample estimates with all observations, i.e., the estimates from the standard approach described in Section 3.1. The last three columns shows the results for our main sample where we restrict the sample size by only considering non-synchronized election pairs that have a time difference of less than or equal to 180 days. Each column incrementally adds additional controls to the regression specification. All standard errors are clustered at the level of state - GE year combination.

In the full sample (columns (1)-(3)), the average probability that the same

[22]The size of the electorate grew by 182% from 1977 to 2019.

[23]The time-trends are calculated as the gap between the election year for a constituency and the year when we record the constituency for the first time in our dataset.

Table 3—Synchronization Effects on Win Probability

	Dep. Variable: I(Same Party = 1)					
	All days sample			**180 days sample**		
	(1)	(2)	(3)	(4)	(5)	(6)
I(Sync = 1)	0.176***	0.155***	0.155***	0.096***	0.089***	0.089***
	(0.034)	(0.027)	(0.027)	(0.031)	(0.029)	(0.029)
PC FE	Yes	Yes	Yes	Yes	Yes	Yes
GE-Year FE		Yes	Yes		Yes	Yes
Controls			Yes			Yes
Mean Dep. Var.	0.41	0.41	0.41	0.42	0.42	0.42
Number Clusters	169	169	169	40	40	40
Number States	21	21	21	10	10	10
Observations	24,018	24,018	24,018	6,410	6,410	6,410

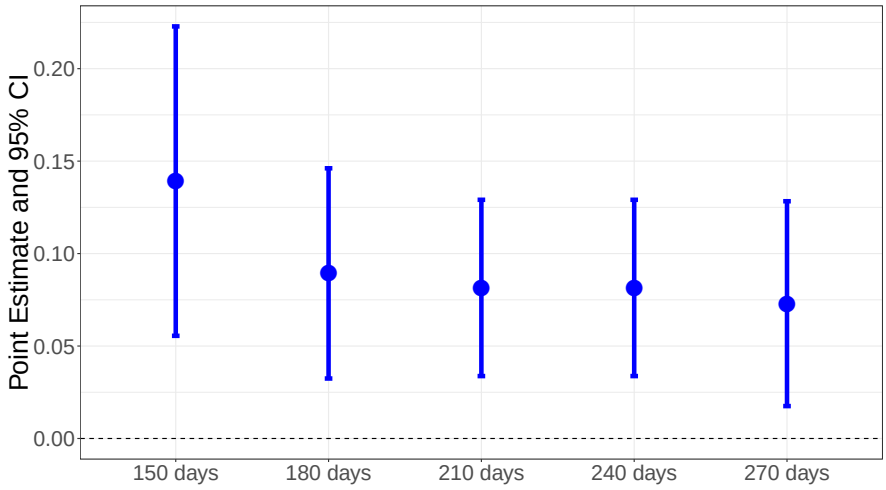
Notes: Columns 1, 2 and 3 includes all state assembly election-general election pairs within zero and five years of time difference. The time difference is computed as the days elapsed since the general election for the next assembly election within five years. Columns 4, 5, and 6 restricts the time elapsed between the general election and assembly election to less than 180 days. The control variables includes reservation status of the constituency (AE Reserved, GE Reserved and AE Reserved x GE Reserved). Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

party wins both PC and AC is 0.41. The standard approach estimates that, with all the controls included, synchronized elections have a 15.5 percentage point higher likelihood of the same party winning both PC and AC in the national and state elections than in non-synchronized elections. This effect is 36.5% of the average probability for non-synchronized elections. This estimate is statistically significant, and is large. We depict the result graphically using a heat map in Figure A2. In Panel (a) we show, for the sample of 21 states, the average value of the main dependent variable when the constituencies had unsynchronized elections. We see that most regions have light color, implying low likelihood of that the same party wins both the PC and the AC during these elections. In Panel (b), we depict the same variable for the same sample of constituencies, but for the elections which were synchronized. We see that across all regions of the country, the probability increases significantly. This shows that the observed effect in columns (1)-(3) of Table 3 is not concentrated in a specific region of the country.

We now turn to columns (4)-(6) with our main sample of analysis. The average probability of the same party winning both AC and PC is similar at

0.42. However, the estimated difference in probability of the same party winning both AC and PC is lower at 0.089, or 8.9 percentage points – or 21% of the mean. This estimate, though smaller compared to the full sample estimate, is still meaningfully large. As before, we show this result graphically in Figure A3. Fewer regions are colored in this Figure due to stronger sample restriction. However, even in this Figure we see that when we move from unsynchronized elections to synchronized elections, significantly more constituencies show increase in the probability of same party winning both tiers of elections.

Figure 2. Point Estimates across multiple time-differences



Notes: This figure documents the probability of winning both elections across different time periods in the synchronized elections. All regressions control for reservation status of the constituency. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Figure 2 plots the coefficient estimates for various constructs of the time difference for the non-synchronized election pairs. The estimated coefficient is by and large stable if we expand the time difference up to 270 days, and the confidence intervals overlap for the estimated coefficients. The point estimate is slightly higher for a shorter, 150 day time difference for non-synchronized election pairs, although not statistically different from other time-windows. This suggests that the average propensity for voters to vote for the same political party when elections are non-synchronized is unlikely to be a function of the time elapsed between the state and national elections, an observation we return to later in our robustness tests of our estimated coefficient on synchronization.

Robustness: We test whether our main results are robust to potential confounders and data sample considerations and report them in Table A2. We introduce AC fixed effects to account for unobserved differences across ACs within a PC. We consider changes in voter composition or other unobserved temporal differences using PC and AC level time trends. In terms of data, we test whether the results are sensitive to merging two different delimitation samples in our data by dropping the post delimitation sample, exclude electorate size weights, include state elections within the 180 days before general elections and address strategic dissolution. In addition, we also test for inclusion of geo-spatial characteristics from the SHRUG database (Appendix Table A3), re-estimate our main specification as logistic regression (Appendix Table A4) and re-estimate standard errors with wild clustered bootstrap due to relatively small number of clusters in our sample (Appendix Table A5). In all these alternate sample restrictions and specifications, our coefficient remains positive and statistically as well as meaningfully significant. Lastly, we perform randomized inference where we test whether our main results can be obtained when synchronization status is randomly varied across different elections. The simulation results (Appendix Figure A1) confirm our belief that our point estimates were not a result of chance. In summary, we find our main estimation to robust to all of these tests. We expand on the details in Appendix Section C.

Synchronization vs. Proximity Effect: We now explicitly test for proximity effect. To test this, we drop the synchronized elections from our sample and reassign synchronization status to take the value 1 if a state election is held in close proximity to a national election (with a time gap of between 1 and 90 days, for example), and 0 when the elections are held not so proximate to one another (with a time gap of, say, 120 and 180 days). A positive and significant effect in this context would imply that our estimates are in line with an alternative hypothesis that voters are more likely to choose the same party across both elections when they happen in close proximity to one another as opposed to after a longer time gap between the two elections.

Appendix Table A6 presents these results. Column 1 compares elections with a time gap of between 1 and 90 days with elections with a time gap of between 120 and 180 days. Column 2 redefines proximate elections as those between 60 and 120 days time gap against a longer gap of 120 and 180 days

between state and national elections. The point estimates are close to zero, and is statistically indistinguishable from zero. This test confirms that what we find is indeed a synchronization effect, and not a proximity effect.

Heterogeneity by Party Type and Incumbency: We use the ECI's classification of national, state and unrecognized parties to classify all political parties into these types. Appendix Table A7 suggests that the state or regional parties, and unrecognized parties are more likely to win both PC and AC in sychronized elections. The nature of political parties that gain from synchronized elections suggests that voters may weigh regional and local preferences disproportionately while making choices during synchronized elections.[24] Appendix Table A8 drills into the question of whether well established voter patterns on incumbency may result in heterogeneous synchronization effects. We find that the the incumbent national government party and the incumbent state government are no more likely to win ACs or PCs, as the estimated coefficient is statistically indistinguishable from zero. The incumbent state government party is most likely to gain from synchronized elections. Our estimates suggest that synchronized election could potentially offset anti-incumbency, at least at the state level.

Effects on Voting Environment: Our core finding in this paper is that the probability that the same political party wins both PC and AC is higher when elections are synchronized. This significant consequence of synchronized elections may not occur in isolation and characterizing the environment in which voters take such decisions may shed further light on this phenomenon. We document the changes to the voting environment in Appendix Section D. To summarize, we find that turnout in national elections increases moderately by 5 percentage points when elections are synchronized, while state elections do not see any increase in turnout. This pattern is contrary to those documented in Western democracies, where the lower tier elections tend to experience surge in turnout. The number of party candidates does not change in state elections, while it falls in national elections due to synchronization. The winning margins

[24] National parties tend to campaign on a pan-Indian platform with its consistency in promises, and ideological and social preferences. In some sense, a large national party does not have the luxury of customising their goals and objectives, and the dexterity to cater to a potentially heterogeneous set of requirements for different geographic regions of the country without being portrayed as being inconsistent by its rivals.

in both elections remain unaffected. Therefore, the voting environment doesn't experience any major disruption due to synchronization of elections.

5 Ruling Out Rational Mechanisms

In the following two sections of the paper we examine the mechanisms behind the effect of synchronization of elections on electoral outcomes. We begin by considering various rational explanations of our result.

5.1 Non-separable Preferences

Voters may rationally change their voting strategy when elections are synchronized if their preferences are defined over the candidates of the two elections in a *non-separable* way. This can happen when a voter's preference over the candidates in one election is contingent on the outcome in the other election. For example, a voter may prefer, say, the BJP candidate to win the AC if the BJP candidate in the PC is the winner. However, if the INC wins the PC, the INC candidate in the AC may become the top choice for the voter.[25] In such cases, a voter's preference is defined over bundles of candidates across elections and such elections are referred to as combinatorial elections (Ahn and Oliveros, 2012). When elections are sequential, voters with non-separable preferences can decide their voting strategies in the later election by conditioning on the outcome of the earlier election. Such conditioning can not happen when elections become synchronized, resulting in changes in voting behavior and consequent effect on the electoral outcomes.

Whether synchronization of elections in this context would lead to aligned representations across elections or not would, however, depend on whether voters have preferences for such representations, as explained in the example above. If they do, then we should expect aligned representation to happen more often when elections are sequential, as then the voters would be able to condition their voting decisions on the outcome of the first election.[26] If, on the other

[25] In this example the voter prefers to have aligned representations across national and state legislatures. One could have other kind of preferences where the correlation across outcomes of the two elections is different.

[26] In sequential elections, the outcome of the first election not just helps a voter condition her voting strategy in the second election, but also reveals information about the overall private information about the electorate in general. Both these forces lead to greater probability of the same party winning both elections. In synchronized elections, a voter's probability of being

hand, the voters prefer misaligned representation then aligned representation is more likely under synchronized elections.

In the Indian context, Nellis (2016) finds that the probability a political party wins an assembly constituency conditional on having won the parliamentary constituency differs between the two large national parties in India, the BJP and the INC. The probability of BJP winning a state election in an AC goes up when they win the corresponding PC in the previous (unsynchronized) national election. For the INC it *goes down*. For non-separable preferences to explain our result, it therefore has to be the case that our results are stronger for the BJP than for the INC. Appendix Table A11 tests this by estimating the effect of synchronized elections on the BJP and the INC separately, and with all national parties together. We find that the estimated coefficients are statistically insignificant in all three cases, thereby discounting a theory of non-separable preferences explaining such voting behavior.

5.2 Across Tier Anti-incumbency

Another plausible explanation of our result is lack of *across tier* anti-incumbency in synchronized elections vis-a-vis sequential ones. The presence of anti-incumbency in Indian elections is a well-documented fact (Uppal, 2009; Ravishankar, 2009). Moreover, the anti-incumbency may spill over from national to state elections (Nellis, 2016). The possibility of such a spill-over, naturally, is higher in sequential elections. Consequently, this effect reduces the probability that the same party wins both AC and PC in sequential elections, thereby resulting in the estimated synchronization effect.

This mechanism is however unlikely to explain the result, given our specification. Firstly, a 180-day time gap is only 10% of the total tenure of a representative. The first few months of a representative's tenure are likely to have representatives behaving their best, especially if they have the knowledge of an upcoming election.[27] Moreover, we estimate the coefficient by varying the length of time elapsed between the national and state elections when they are unsynchronized. Figure 2 plots the estimated coefficients. Arguably, across tier

pivotal in one election has implication on the pivot probability on the second one. This reduces the likelihood that the party would win both elections.

[27] Ravishankar (2009), for example, shows that there is initially a "honeymoon period" for representatives of ruling parties. The cross election spill-overs are in fact positive for the first half of the tenure.

anti-incumbency is likely to strengthen with more time elapsed between the two elections. Therefore, we should find strong upward sloping trend in the coefficient as we increase the length of time elapsed between elections. We however find that our estimated coefficient remains stable as we increased the time gap. This rules out across tier anti-incumbency as the main source of our effect.

5.3 Coattail Effects

Our results may result from the "coattail effect" well documented in the academic literature, especially in the context of US an Europe (Campbell and Sumners, 1990; Golder, 2006; Bracco and Revelli, 2018). In this phenomenon a salient candidate in one election attracts votes for candidates to her party in the other election held simultaneously. Typically, the context in which the coattail effect has been studied involves elections that have clear hierarchy whereby one is more prominent (say, the Presidential elections in the US) than the other (say, the US congress elections). In these contexts, concurrently held elections results in significant increase in the turnout for the "lower order" election compared when it happens sequentially ("off-cycle"). The additional voters that synchronization brings in may be more uninformed and take cues from candidates in the more salient election (Zudenkova, 2011), resulting in coattail effects that mirror our estimates.

In the Indian context, both the national and state elections are highly prominent; the candidates in both elections spend significant sums of money during campaigns and representatives elected in both elections yield significant power and control over public resources. Understandably, the turnouts in these elections, unlike the contexts of US and Europe, are not very different to begin with. Table 2 reports that the average turnouts in national and state elections are 0.59 and 0.57, respectively. Moreover, we find that turnout for state elections do not change between synchronized and off-cycle elections. We observe a five percentage point increase in turnout during synchronized elections for national elections (Column 4, Table A9). It is therefore unlikely that our results are driven primarily by coattail effect.

Nonetheless we test coattail effects more explicitly in our sample. We compute the 75th and 90th percentile on the win margin distribution to proxy for "star candidates" in elections, and use these as cut-off points to test whether our effect is driven by these candidates. We interact an indicator variable for candi-

Figure 3. Synchronization Effects on Visit by Political Party

Notes: The point estimate and errors bars in blue use the national election survey as the control group, while the one in maroon uses the state election survey as a control group. Survey Question: Did a party worker visit your house before elections? Standard errors are clustered at the State GE-Year level. Controls: log(Age); Female; Education: Illiterate, Below Matric; Social Category: SC, ST, OBC; Religion: Hindu, Muslim; Locality: Urban; Assets: Four Wheeler, Two Wheeler, TV. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

dates whose win margin is above these two cut-off points, with our main synchronized elections indicator variable to decompose our effect into that which arises due to prominent candidates and otherwise. Appendix table A12 suggests that our main results are not driven by coattail effects.

5.4 Campaigning by Political Parties

During synchronized elections, political parties can exploit the economies of scale in campaigning, and are better equipped to lower the per-capita expenditure on outreach since they get to campaign for two elections at once. Synchronization may therefore lead to greater rewards in terms of electoral outcomes per unit of expenditure. This would imply that the estimated concurrence effect is driven by supply-side effects due to economies of scale for political parties.

We use post-poll voter survey data described above to show that there is indeed some increase in election campaigning during synchronized elections. In the surveys the subjects were asked whether any party worker visited their house before elections. We check whether the voters are more likely to say yes following synchronized elections. Figure 3 reports the results. We find that the likelihood of a party visiting a voter's house increases by 24 percentage

points in synchronized elections relative to sequential national elections. The change relative to sequential state elections is more muted and is statistically insignificant. However, given that the national parties have substantially more resources to expand their campaigning activities, we should expect the main result to be driven by them, rather than state and regional parties. We however do not observe that.

Taken together, our evidence suggests that there may be factors other than simple rational explanations that may explain these findings.

6 Behavioral Mechanism

6.1 A Behavioral Model of Voter Choice

To systematically evaluate behavioral mechanisms at play, we first establish a theoretical framework to study how behavioral constraints of voters affect their voting decisions and consequently, electoral outcomes in synchronized elections.

Consider an election E with two candidates A and B running in the election. There is a continuum of voters of mass $1 + \sigma$; each voter is denoted by $i \in [0, 1 + \sigma]$. σ is a random variable uniformly distributed over $[0, 0.5]$. The mass of voters is therefore random. We interpret this as uncertainty generated by turnout in elections. Since all voters vote in our model, one can consider a larger electorate of mass 1.5 and the mass of voters who turnout is given by $1 + \sigma$, which can be uncertain due to many factors such as idiosyncratic cost of voting, "better get out to vote" campaigning by one candidate and so on. We assume that voters $i \in (1, 1 + \sigma]$ always vote for A. For the analysis below we therefore focus on the decision-making of voters $i \in [0, 1]$ to compute the mass of votes received by the candidates from this set of voters. At the end we add the mass σ to the vote of A to calculate the vote share of candidates in the election.[28]

Each candidate $c \in \{A, B\}$ is characterized by her party identity P^c and her personal characteristics θ^c. P^c can be one of two possible parties – 1 or 2, i.e.,

[28] In absence of the noise, vote shares of candidates would be deterministic and therefore, the probability of win would be either zero or one. Introducing noise in the mass of voters makes the probability of win non-degenerate, without complicating the model too much. The model of probabilistic voting adopts a similar approach to ensure that probability of win is non-degenerate Persson et al. (2016).

$P^c \in \{1, 2\}$. The personal characteristics parameter θ^c is potentially a high-dimensional object, comprising of the candidate's caste, religion, family details, income and wealth, and various other aspects of her character such as attitude towards co-ethnic voters, charisma, gift of gab etc. We assume that $\theta^c \in \Theta$. Voter i's utility from candidate c getting elected is given by

$$u_i(P^c, \theta^c; \lambda_i) \;=\; \lambda_i u_1(P^c) + (1 - \lambda_i) u_2(\theta^c) \tag{2}$$

where $\lambda_i \in [0, 1]$ is the relative importance of party in voter i's preference, and u_1 and u_2 are continuous functions defined over the two features of the candidate, respectively. Higher value of λ_i, therefore, implies that voter i cares more about the party affiliation of the candidate than her personal characteristics. Since parties play an important role in the election campaigning in India, we think that party is a salient feature of candidates. Therefore, it is reasonable to assume that voters would treat the party affiliation of candidates separately in their preference vis-a-vis the candidates' other characteristics. The distribution of λ_i is given by $F(\cdot)$, with pdf $f(\lambda_i) > 0$ for all $\lambda_i \in [0, 1]$. We assume, without loss of generality, that $u_1(P^A) > u_1(P^B)$, i.e., if all voters cared only about parties, then all voters would have voted for candidate A.[29] Further, each candidate's θ^c is drawn independently from a distribution over Θ. The distribution, in turn, induces a distribution over $u_2(\theta^c)$. To analyze voting decisions we only need to know the induced distribution over $u_2(\theta^c)$, and therefore, directly make assumptions on that. We assume that $u_2(\theta^c)$ is uniformly distributed. Specifically, the distribution is given by

$$u_2(\theta^c) \sim U[\underline{u}_2, \bar{u}_2] \quad \text{where} \quad \underline{u}_2 = \min_{\theta^c \in \Theta} u_2(\theta^c) \;\text{ and }\; \bar{u}_2 = \max_{\theta^c \in \Theta} u_2(\theta^c).^{30}$$

We assume that $u_1(P^A) - u_1(P^B) < (\bar{u}_2 - \underline{u}_2)$. The purpose of this assumption will become clear later in the model setup.

Now, we assume that voters get to know about the party affiliation of candidates, i.e., about P^A and P^B, without any cost. However, θ^A and θ^B are initially unknown to all voters. They can acquire information at some cost.[31] Due to

[29] This is a simplifying assumption. Our results would not change if we assume that for some voters $u_1(P^A) > u_1(P^B)$, while for others $u_1(P^A) < u_1(P^B)$.

[30] $-\infty < \underline{u}_2 < \bar{u}_2 < \infty$ by assumption.

[31] This is again a simplifying assumption. We can have a model where knowing party affiliation of candidates is also costly. However, as long as the cost is lower than the cost of knowing

the salient nature of parties in Indian elections, the information about candidates' party affiliation is much more easily available to voters, as opposed to their personal characteristics, for which the voters would have to attend rallies, or consume media or be engaged with the political activities of the local area more generally. We assume that each voter can pay $\kappa > 0$ and know θ^A and θ^B perfectly.

6.1.1 Decision Making in a Single Election

In a world of costless information acquisition, a voter would vote for candidate A if

$$u_i(P^A, \theta^A; \lambda_i) \geq u_i(P^B, \theta^B; \lambda_i)$$

However, given that information about θ^c is costly to acquire, each voter makes a decision about whether to acquire that information. Consequently, the decision-making process of the voter would also be contingent upon information acquisition. To see this, consider the case where the voter chooses not to acquire the information. In that case she would have to make a decision based on the party identity of the candidates alone, as she would have the same expected value of θ^c for both candidates. We say that in such a scenario the voter adopts a *rationale* for voting which is based on the party identities of candidates alone. Even though in his true preference, the voter has weight λ_i on the party, she makes her voting decision by effectively putting all weight on the party. In other words, party becomes more salient during the voter's decision-making. In contrast, if she chooses to acquire the information about θ^c, then she has all information necessary to check if equation (2) holds. In that case, therefore, she adopts a rationale for voting that weighs $u_1(P^c)$ and $u_2(\theta^c)$ according to her true preference.

Formally, we define a rationale for voting by voter i by $m_i \in [0, 1]$ where m_i is the weight put on $u_1(P^c)$ while deciding whom to vote for. The voter i, therefore, votes for A using rationale m_i if

$$u_i(P^A, \theta^A; m_i) \geq u_i(P^B, \theta^B; m_i) \tag{3}$$

$$\text{where} \qquad u_i(P^c, \theta^c; m_i) \;=\; m_i u_1(P^c) + (1 - m_i) u_2(\theta^c).$$

personal characteristics of the candidates, our results will hold.

Importantly, m_i can be different from λ_i. However, the choice of m_i by the voter is not arbitrary. It is shaped by various informational (i.e., rational) and behavioral constraints that the voters face. In this section of the model information acquisition shapes choice of m_i. In the Section 6.1.3 below, we introduce an additional behavioral constraint when we discuss voting in presence of synchronized elections. In presence of costly information acquisition, we see that the voter will choose one of two rationales: $m_i = 1$ if she doesn't acquire information about θ^c and $m_i = \lambda_i$ if she does.[32] We refer to the first kind of rationale as the "party" rationale, and the second one as "preference" rationale.

The "party" rationale makes the party affiliation of candidates more salient relative to the true preference of the voter. This is related to the salience theory of choice proposed by Bordalo et al. (2012, 2013, 2015). The salience theory proposes that individuals' preferences may get distorted by information on the salient features of objects and examine various implications of this phenomenon on consumer choice, asset prices, judicial decisions etc. Our model applies this concept to voting decisions and shows how certain informational and behavioral constraints can lead to higher salience of parties in voters' preference and consequently, influence voting decisions and electoral outcomes.

If voter i adopts rationale $m_i = 1$ then she would vote for A as $u_1(P^A) > u_1(P^B)$, by assumption. Hence, in that case her expected utility is given by

$$\mathbb{E}u_i(m_i = 1) \;=\; \lambda_i u_1(P^A) + (1-\lambda_i)\mathbb{E}[u_2(\theta^c)] \;=\; \lambda_i u_1(P^A) + (1-\lambda_i)\frac{\bar{u}_2 + \underline{u}_2}{2}$$

Now, we ask: when would the voter pay for the information cost $\kappa > 0$ and adopt the "preference" rationale? We propose that she would adopt "preference" rationale if and only if two conditions hold: (i) she anticipates that doing so could *potentially* make her change her vote to the other candidate and (ii) give her *potentially* higher payoff than choosing the "party" rationale. The first condition is motivated by the fact that the voter votes for candidate A with the "party" rationale. Therefore, if she thinks that paying for the information cost couldn't possibly change her vote, then she shouldn't rationally pay for it. Ad-

[32] The starkness of the rationale choice is driven by our assumption about information acquisition. If the information acquisition was continuous in nature, then the possible rationales would also have been continuous. For example, one could assume that voters get noisy but informative signals about θ^c and they could pay more to get a more precise signal. In that case, choice of m_i would be continuous. However, the nature of analysis would remain the same.

ditionally, the second condition says that even if the first condition holds for a voter, if her utility (net of information cost) under the "preference" rationale couldn't possibly be higher than her expected utility from adopting the "party" rationale, then the voter shouldn't pay for the information as well. A voter i would satisfy the first condition if the following holds:

$$\lambda_i u_1(P^B) + (1-\lambda_i)\bar{u}_2 \geq \lambda_i u_1(P^A) + (1-\lambda_i)\underline{u}_2$$

where the LHS gives the best possible payoff that the voter could hope to get voting for candidate B and the RHS is the worst possible payoff from voting for A. If the above condition doesn't hold then paying for the information cost wouldn't change his vote. The above condition implies

$$(1-\lambda_i)(\bar{u}_2 - \underline{u}_2) - \lambda_i(u_1(P^A) - u_1(P^B)) \geq 0 \tag{4}$$

Hence, there exists a $\lambda^* \in (0,1)$ such that for all voters with $\lambda_i > \lambda^*$, the equation (4) would not hold and therefore, would adopt the "party" rationale. The second condition implies that

$$\lambda_i u_1(P^B) + (1-\lambda_i)\bar{u}_2 - \kappa \geq \mathbb{E}u_i(m_i = 1)$$

where the LHS gives the highest payoff to a voter if she adopts the "preference" rationale and votes for candidate B and the RHS is the expected payoff from adopting the "party" rationale. Rearranging terms in the equation above we get

$$(1-\lambda_i)\frac{\bar{u}_2 - \underline{u}_2}{2} - \lambda_i(u_1(P^A) - u_1(P^B)) \geq \kappa \tag{5}$$

As before, there exists $\bar{\lambda} \in (0,1)$ such that for all voters with $\lambda_i > \bar{\lambda}$ the equation (5) is not satisfied and hence would adopt the "party" rationale. Moreover, comparing equations (4) and (5) we get that $\bar{\lambda} < \lambda^*$. Hence, voters with $\lambda_i \leq \bar{\lambda}$ satisfy both the conditions for paying the information cost and therefore, acquire the information about θ^c for both candidates and use the "preference" rationale.

Our analysis shows that there are two distinct reasons why a voter may abstain from acquiring information and use the "party" rationale for voting. Voters with $\lambda_i > \lambda^*$ care so much about the party that they know they would never vote for candidate B even in the best case scenario. Therefore, they don't pay for the

information. Voter with $\lambda_i \in (\bar{\lambda}, \lambda^*]$ could potentially change their vote to B after acquiring the information. However, given the cost of information acquisition, it is not worth for them to pay for it even assuming the best case scenario. Therefore, the mass of "party" rationale voters is given by $(1 - F(\bar{\lambda}))$. All of these voters vote for candidate A. Also, there would be some voters who use the "preference" rationale and vote for candidate A. The calculation of share of such voters is shown in Appendix Section E. Finally, we bring back the random mass σ of voters who always vote for A. Adding all the terms, we get the mass of vote that candidate A receives in a single election:

$$V^A = (1-F(\bar{\lambda}))+\frac{F(\bar{\lambda})}{2}\left[1+\frac{\mathbb{E}\left[\frac{\lambda_i}{1-\lambda_i} \mid \lambda_i \leq \bar{\lambda}\right](u_1(P^A)-u_1(P^B))}{(\bar{u}_2-\underline{u}_2)}\right]+\sigma = v^A+\sigma, \text{ say.} \tag{6}$$

Therefore, candidate A's probability of win is given by

$$\pi^A = \mathbb{P}\left[\frac{v^A+\sigma}{1+\sigma} \geq \frac{1}{2}\right] = \mathbb{P}\left[\sigma \geq 1-2v^A\right] = 1-2\left[1-2v^A\right] = (4v^A-1)$$

6.1.2 Decision Making in Sequential Elections

Suppose that there are now two elections, E and $E^{'}$ which happen sequentially. Each of the elections is identical to the single election we studied above. In each election, there are two candidates who belong to two different parties and the voters' total utility from participating in the two elections is the sum of the utilities from each of the elections separately. We denote the candidates in election E by A and B, and in $E^{'}$ by $A^{'}$ and $B^{'}$. The pair of two parties is identical across the two elections. For simplicity, we assume that candidates A and $A^{'}$ belong to party 1 and candidates B and $B^{'}$ belong to party 2. For election E the mass of voters is $1+\sigma$, and for $E^{'}$ it is $1+\sigma^{'}$, where σ and $\sigma^{'}$ are independently drawn from the same distribution stated above.

The only difference between the two elections is the cost of information acquisition. They are given by κ and $\kappa^{'}$ in elections E and $E^{'}$, respectively. Moreover, we assume that $\kappa^{'} > \kappa > 0$. Therefore, information is harder to get in the $E^{'}$ election compared to E. It could be because in the $E^{'}$ election is a higher tier election compared to the election E (say, for the national parliament as opposed to the state assembly). Therefore, the constituencies would be larger

in $E^{'}$ and hence, it is presumably harder for the candidates to campaign in every part of the constituency. Therefore, it may be costlier for the voters to know personal details about them.

Since the elections happen at two different points in time, the voters treat each election separately and make their decisions independently in each election. Therefore, the analysis of each election would be identical as above. Therefore, we get that in the two elections the mass of voters who adopt "party" rationale are given by $(1 - F(\bar{\lambda}(\kappa)))$ and $(1 - F(\bar{\lambda}(\kappa^{'})))$, where $\bar{\lambda}(\kappa)$ and $\bar{\lambda}(\kappa^{'})$ are the values of $\bar{\lambda}$ (from the Section 6.1.1) for information cost κ and $\kappa^{'}$, respectively.

Since $\kappa^{'} > \kappa$, it is evident that $\bar{\lambda}(\kappa^{'}) < \bar{\lambda}(\kappa)$ and hence $(1 - F(\bar{\lambda}(\kappa^{'}))) > (1 - F(\bar{\lambda}(\kappa)))$. Moreover, the voters with $\lambda_i \geq \bar{\lambda}(\kappa)$ vote using the same "party" rationale in *both* elections. Similarly, the voters with $\lambda_i \leq \bar{\lambda}(\kappa^{'})$ vote using the rationale $m_i = \lambda_i$ in both elections. Finally, the voters with $\lambda_i \in (\bar{\lambda}(\kappa^{'}), \bar{\lambda}(\kappa))$ vote using the rationale $m_i = \lambda_i$ in election E, but switch to the "party" rationale in $E^{'}$.

6.1.3 Decision Making in Synchronized Elections

We now consider the two elections E and $E^{'}$ occurring synchronously, i.e., the voters vote on both the elections *at the same time*. The elections, apart from their timing, are same as the previous section. Simultaneity of elections requires separate analysis because the voters in our model are cognitively constrained. We assume that the voters can hold in their thought process only one rationale for voting. Having multiple rationales for voting in separate concurrently held elections is cognitively costly. Therefore, voters faced with two (or more) elections are forced to choose a uniform rationale across all elections. Now, from our analysis in Section 6.1.2 we know that voters with $\lambda_i \in [\bar{\lambda}(\kappa), 1]$ choose the "party" rationale in both elections, when they are held sequentially. Therefore, if the elections happen simultaneously then these voters should not have any problem as their rationales were compatible across elections to begin with. Same is true for voters with $\lambda_i \in [0, \bar{\lambda}(\kappa^{'})]$, who would choose the "preference" rationale in both elections, held sequentially or simultaneously. However, voter with $\lambda_i \in (\bar{\lambda}(\kappa^{'}), \bar{\lambda}(\kappa))$ would have preferred to choose "preference" rationale in E and "party" rationale in $E^{'}$. However, due the cognitive constraint, they would have to choose one rationale for both elections, when they are held si-

multaneously.

We therefore first analyze the *rationale choice* of these voters. Suppose that such a voter chooses the "party" rationale for both elections. Then he saves on the information cost κ in election E, but potentially at the cost of sacrificing some payoff from voting for candidate B in that election. The net payoff loss for the voter i is then given by

$$(1-\lambda_i)\frac{\bar{u}_2-\underline{u}_2}{2}-\lambda_i(u_1(P^A)-u_1(P^B))-\kappa\geq 0.$$

On the other hand, if the voter chooses the "preference" rationale for both elections then she pays an additional information cost $\kappa^{'}$ in election $E^{'}$. Her voting decision, however, remains same in both elections. To see why, notice that she would still optimally vote for candidate A in election $E^{'}$, even though she pays for the information cost. Therefore, her net payoff loss is given by $\kappa^{'}$. Hence, the voter would optimally choose the "party" rationale for both elections if

$$(1-\lambda_i)\frac{\bar{u}_2-\underline{u}_2}{2}-\lambda_i(u_1(P^A)-u_1(P^B))\leq\kappa+\kappa^{'} \tag{7}$$

However, for all $\lambda_i\in(\bar{\lambda}(\kappa^{'}),\bar{\lambda}(\kappa))$, we have

$$(1-\lambda_i)\frac{\bar{u}_2-\underline{u}_2}{2}-\lambda_i(u_1(P^A)-u_1(P^B))\leq\kappa^{'}$$

Hence, the condition (7) is satisfied for all voters with $\lambda_i\in(\bar{\lambda}(\kappa^{'}),\bar{\lambda}(\kappa))$. This implies that all voters who face a rationale choice choose in favor of the "party rationale" for both elections. This gives us our first result:

Result 1 *In the election with cheaper information cost, the salience of party, on average, is higher in voters' preference when it is synchronized with another election. There is no change in the salience of party among voters in elections with higher information cost.*

The proofs of all Results are in Appendix Section F. Result 1 highlights that behaviorally constrained voters faced with multiple elections increase the salience of parties during their voting decisions. Moreover, it tells us that the shift in salience will happen only for the election with lower information cost. In the Indian context, since candidates in state assembly elections cover a significantly smaller jurisdiction than those in the national election, it is reasonable

to assume that it would be cheaper for voters to acquire the information about candidates in the AC compared to the PC. We would test this prediction of the model in the following section. We now examine the implication of the heightened salience of party among voters on their voting decisions. For this we focus on the phenomenon of split-ticket voting, i.e., voters voting for two different parties in the two elections. Result 2, below, shows how synchronized elections affect extent of split-ticket voting:

Result 2 *Fraction of voters engaged in split-ticket voting goes down in synchronized elections as compared to sequential ones.*

Finally, we examine the consequence of the change in the salience of party for electoral outcomes. The following result examines the likelihood of synchronized representation, i.e., same party winning both elections, under simultaneous and synchronized elections:

Result 3 *The probability that party 1 wins both elections is higher when elections are synchronized as opposed to sequential.*

Result 3 focuses on the party 1 because we assumed that when voters use "party" rationale, they always vote for that party. If we allow some voters to vote for the other party with the "party" rationale, then following the same logic as above, we would get that probability that party 2 wins both elections would also be higher under synchronized elections.[33] Result 3 therefore is consistent with our main empirical result. The following section tests the other two theoretical predictions and provides additional evidence which suggests that behavioral constraints are most likely at play.

6.2 Empirical Evidence Supporting Behavioral Mechanism

So far our empirical analysis relied on aggregate election data from the Election Commission of India. However, to examine the mechanisms we additionally use voter surveys by the Centre for the Study of Developing Societies, India, as described in Section 2.1. These post-poll surveys, both for national and state elections, cover a range of questions soon after elections (and before the release of the election results). We however only observe repeated cross-sections

[33]The probability of different parties winning the two elections, therefore, will reduce in this case.

of the voters across multiple waves of the data, and not a panel data of voter preferences. We use this data at the PC level, and evaluate outcomes as follows:

$$y_{i,p,s,t} = \mu_p + \mu_t + \gamma I(\text{Sync} = 1)_{s,t} + \beta' X_{i,p,s,t} + \epsilon_{i,p,s,t} \tag{8}$$

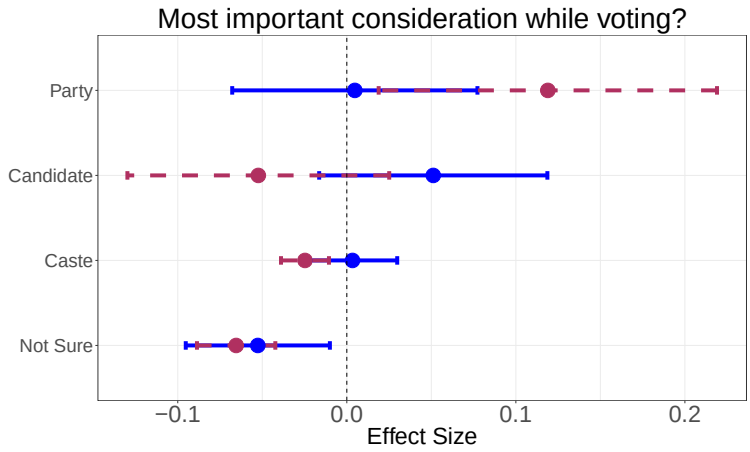
where y is the outcome variable of an individual (i) residing in the PC (p) and state (s) at a national election year t. $X_{a,p,s,t}$ includes a vector of controls such as age, gender, education, social category, religion, locality (uban or rural) and ownership of assets (four wheeler, two wheeler and TV).

6.2.1 Party Salience in Voter Preference

One of the key predictions of our model is that synchronized elections result in an increase in the salience of party relative to other more personal characteristics of candidates. Moreover, Result 1 of the model predicts that this should happen only for the election with cheaper information cost, i.e., the state assembly elections. To test Result 1, we use the following question from the post-poll survey data as our outcome variable: "People have different considerations while deciding whom to vote for. What mattered to you more while deciding whom to vote for in the recent election - party or candidate?" The options available for response were Party, Candidate, Caste, Not Sure. We estimate whether voters respond differently following an election that was synchronized compared to voters who were asked the same question after an unsynchronized election. We estimate this for national and state elections separately.

Figure 4 plots the estimates from this effect, and finds for state elections, a 12% increase in the fraction of voters who say a candidate's party affiliation was the most important consideration in the decision process during a synchronized election, when compared with sequential ones. We, however, do not find any such pattern for national elections. Moreover, the fraction of voters who mention 'candidate' and 'caste' in response to the question reduces. This suggests that the additional increase in the fraction of those who consider parties as being important is driven by those who switch from candidate and caste preferences, and those who are on the fence, i.e., unsure of what considerations drives them to vote. We therefore verify Result 1.

Figure 4. Synchronization Effects on Voting Consideration



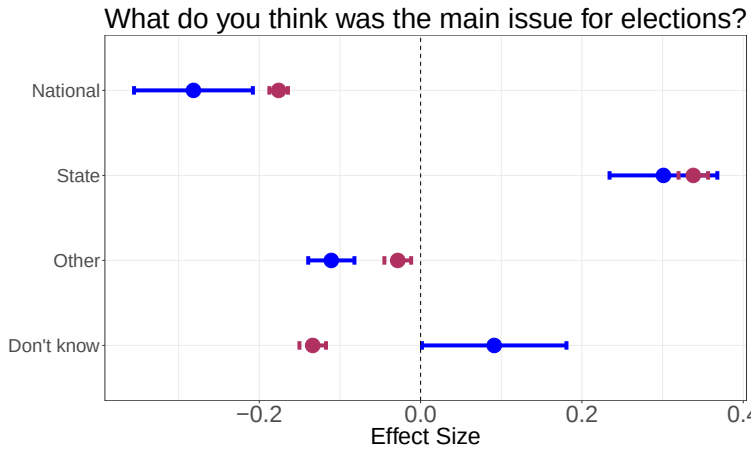
Notes: The point estimate and errors bars in blue use the national election survey as the control group, while the one in maroon uses the state election survey as a control group. Survey Question: People have different considerations while deciding whom to vote for. What mattered to you more while deciding whom to vote for in the recent election - party or candidate? Standard errors are clustered at the State GE-Year level. Controls: log(Age); Female; Education: Illiterate, Below Matric; Social Category: SC, ST, OBC; Religion: Hindu, Muslim; Locality: Urban; Assets: Four Wheeler, Two Wheeler, TV. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

6.2.2 Split-ticket Voting

We now test Result 2 of the model which predicts that synchronized elections will result in reduction in split-ticket voting. If a voter is successful at differentiating the decision making processes for the two elections, then it may give rise to greater prevalence of split-ticket voting, a stylized fact about voting behavior across the world, and something that may have rational economic foundations (Chari et al., 1997). A reduction in split-ticket voting, on the other hand, would be consistent with an increase in cognitive constraints faced by the voter, as suggested by Result 2.

We test it using the post-poll survey data in Appendix Table A13. The outcome variable is an indicator that takes value one if the survey subject says that she/he voted for the same party in the last national and state elections, and zero otherwise. After controlling for age, education, gender, social groups, metrics of asset ownership, we find that the voters are 7 percentage point more likely to report that they voted for the same party in the national and state elections when they are held concurrently (column 1). The fall in split-ticket voting is also consistent with presence of coattail effects or more homogenous campaign-

Figure 5. Synchronization Effects on Election Issues



Notes: The point estimate and errors bars in blue use the national election survey as the control group, while the one in maroon uses the state election survey as a control group. Survey Question: Talking about the election just completed what do you think was the main issue around which the election was fought this time? Standard errors are clustered at the State GE-Year level. Controls: log(Age); Female; Education: Illiterate, Below Matric; Social Category: SC, ST, OBC; Religion: Hindu, Muslim; Locality: Urban; Assets: Four Wheeler, Two Wheeler, TV. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

ing (across national and state elections) by political parties during synchronized elections. However, coattail effects may be more likely to be driven by less sophisticated or less informed voters. In columns 2-4 we interact the synchronization status with age, gender and education and find that all interactions are small and statistically insignificant. This shows that the fall in split-ticket voting is uniform across voters of all kinds, suggesting that it is not a consequence of coattail effects.

6.2.3 Issue Priorities

Synchronized elections could potentially also affect the issue that voters prioritize. This may also result in affecting the choices that voters make during elections. Figure 5 estimates the synchronization effect on answers to the question, "Talking about the election just completed what do you think was the main issue around which the election was fought this time?"

We find that the fraction of voters who respond "National" decreases significantly relative to both sequential national and state elections. This drop is substituted with state issues gaining priority during synchronized elections. The fraction of voters responding "State" go up by about 30 percentage point. The

findings go against the conventional instinct that national issues may gain more prominence than state issues should elections be synchronized. Moreover, it is also consistent with the result in Table A7 which found that the increase in the probability of the same party winning both PC and AC is concentrated in state and regional parties.

Taken together, the evidence from the post-poll surveys shed light on a consistent mechanism at play: voters suffer from a cognitive constraint when they vote simultaneously on multiple elections. Such cognitive constraint forces them to shift their focus on the party affiliation of candidates and away from her personal characteristics while making decisions and prioritize state issues over national during synchronized elections.

7 Synchronized Elections and Economic Outcomes

Our analysis shows that synchronized elections lead to significant changes in voter behavior, and increases the probability that the same party wins both national and state constituencies. In this section we investigate whether synchronized elections lead to economic benefits of the constituency.

One reason to think that this may happen is because synchronized representation across tiers of government – a consequence of simultaneous elections – have been shown to have positive effects with regard to allocation of public resources. For instance, Rao and Singh (2003) and Khemani (2003) highlight that transfer of public resources from the center to state governments in India is higher if the ruling party at both the governments is the same. Khemani (2003) distinguishes between statutory transfers from discretionary ones and confirms the hypothesis that it is the discretionary transfers that are subject to such political manipulations.[34] Arulampalam et al. (2009) further show that such effects of political alignment is concentrated for politically aligned states that are also "swing" in nature. Asher and Novosad (2017) find that the local economic impact of being represented by a politician in the ruling party is positive.[35]

[34]The evidence is consistent with findings of positive effect of political alignment in other contexts. See, for example, Solé-Ollé and Sorribas-Navarro (2008) for evidence from Spain, Worthington and Dollery (1998) for evidence from Australia, Grossman (1994) and Levitt and Snyder Jr (1995) for evidence from the US.

[35]Some recent work also highlight some potentially negative consequences of political alignment. Callen et al. (2019), for example, highlight in the context of Pakistan that patronage networks may strengthen in politically aligned areas, leading to worsening of the quality of

For our analysis we measure economic activity in a few ways. First, following Asher and Novosad (2017) we use night lights as a measure of economic activity for each assembly constituency in any given year. We also use additional information from a database of capital investments in India – the CAPEX database – from the Centre for Monitoring the Indian Economy that measures whether new projects are under implementation, and whether past projects have been completed as additional measures of economic activity in the constituency.[36] We use these measures to estimate the impact of both synchronized election as well as representation. Since our primary argument behind expecting a positive economic outcome of simultaneous elections relies on the mechanism of synchronized representation, we wish to examine whether we get consistent results.

Panel A Table 4 estimates the impact of synchronized elections while in Panel B we estimate the effect of synchronized representation. For Panel A estimates, we measure night light intensity and project implementation and completion in each constituency in each year and regress them on whether the constituency held synchronized elections in the most recent past.[37] The Panel B results follow a similar specification with the synchronized representation variable defined accordingly.

Column 1 of Panel A reports the effect of synchronized election on logarithm of aggregate night lights in an AC. We find that ACs with synchronized elections experience 5.9% higher night lights than ACs (within the same PC) with sequential elections. However, in column 2 and 3, where we estimate the impact on implementation and completion of capital investment projects, we do not find any effect of synchronized elections. The coefficients are very small in magnitude and statistically insignificant. In Panel B, we find that synchronized representation did not result in any additional economic activity. The coefficients in all the three columns are small, negative, and statistically insignificant.

public service. Das and Sabharwal (2017) show that, in the Indian state of Rajasthan, districts that were politically aligned to the state government were allotted worse quality police officers, leading to higher crime rates in those districts.

[36] We use the geo-code for projects in the database to map them to constituencies. This database has an important caveat that it captures big projects that are valued at more than ₹10 million, or about US$ 130,000.

[37] The "I(Sync = 1)" dummy variable takes value one for all the years following a synchronized election until the constituency faces the next election, when the indicator will change its value if the election is not synchronized. It will remain one if the next election, whether national or state, is concurrently held with another election.

Table 4—Synchronized Elections on Economic Activity

	Dep. Variable:		
	Night Lights	CAPEX	
		Implemented	Completed
	(1)	(2)	(3)
Panel A: Synchronized Elections			
I(Sync = 1)	0.059**	0.009	0.002
	(0.030)	(0.016)	(0.012)
Panel B: Synchronized Representation			
I(Same = 1)	−0.002	−0.006	−0.007
	(0.027)	(0.008)	(0.007)
PC FE	Yes	Yes	Yes
GE Year FE	Yes	Yes	Yes
Mean Dep. Var.	26.55	0.38	0.22
Observations	54,278	34,467	34,467

Notes: Column 1 takes an assembly constituency x year panel (1992 - 2007) for logarithm of observed night lights. Column 2–3 uses data from CAPEX and takes a project x year panel (1991 - 2007) using a dummy for project implemented (Column 2) and a dummy for project completed (Column 3). Standard errors are clustered at the State - GE Year level. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

We therefore find that synchronized elections have rather muted economic benefits, and the benefits don't seem to occur through synchronized representation.

8 Conclusion

In this paper we examine the consequences of synchronizing national and state elections in India by exploiting natural variation in the electoral cycles of the two tiers of governance. For identifying the causal effect of synchronization of elections, we compare the same assembly constituency over time and compare the outcomes across election cycles when the two elections happened on the same day vis-a-vis when they happened within 180 days of each other. We show that the probability that the same political party wins both the parliamentary and assembly constituencies goes up by 0.089 when their elections are synchronized. We further find that voters exhibit reduced split-ticket voting and suffer from great decision complexity when they vote in simultaneous elections. We there-

fore convincingly document that synchronized elections in India involves substantial changes in the way voters process information and make their choices, leading to changes in the electoral outcomes and potentially government formation. Therefore, any administrative gains from synchronization of elections must be weighed against the desirability of influencing voter decision-making.

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Appendix

For Online Publication

A Elections in India

Conduct of Elections: The Election Commission of India (ECI, henceforth) is the constitutional body that is responsible for conducting elections in India. In both national and state elections, candidates from various national, regional and local political parties may stand for elections. Since the constitution and the People's Representation Act of 1956 do not preclude non-affiliated candidates from taking part in an election, independent candidates who have no affiliation to a political party can also contest in elections in India. The ECI enforces the Model Code of Conduct for all electoral candidates before elections.[38] This code of conduct is enforced to prevent the incumbent from having an unfair advantage through declaring new government policy, or undertaking any development activity during the time candidates canvass for votes in their constituencies. The model code of conduct usually comes into force soon after the announcement of the election schedule and ceases to be operational after the results are declared. The code is in force for a period of two months for national elections, and one month for state elections.

In the earlier years, all the constituencies within a state would typically vote on the same day. However, the number of eligible voters in India has grown from about 200 million in 1951 to around 850 million as of 2019. With such large group of eligible voters national elections and few large state assembly elections in recent times have been conducted over multiple phases. Therefore, even within a state, the date of voting for a given national or state election may vary across constituencies.

Post-independence the GE and AE were initially synchronized all across the country. However due to pre-mature dissolution of some state assemblies in 1968 and 1969, the synchronization cycle got disrupted for the first time. Following that, the national and state elections have become asynchronous.

[38] For additional details, please refer to Volume 3: Compendium of Instructions, https://eci.gov.in/files/file/9725-compendium-of-instructions-2019-volume-iiiiii-iv/; last accessed 28th January 2020

Delimitation of Constituencies: Till today the delimitation exercise in India has been carried out four times - in 1952, 1966, 1977, and 2008. The Delimitation Commission submitted its reports in the years 1952, 1963, 1972, and 2002. The years mentioned in the main text refer to the years of implementation. Iyer and Reddy (2013) show that the delimitation exercise in 2008 was, for the most part, fair and objective, with very little evidence of political manipulation or gerrymandering.

Election Procedures: The election procedures are not different between national and state assembly elections during synchronized elections. For example, political parties gain no additional time for broadcast/telecast for a state assembly election when synchronized with the national election.[39] The election observer appointed for a national election in the PC will also be the observer for the corresponding ACs during synchronized elections. The number of polling officers remains the same irrespective of the synchronized nature of elections unless the total number of candidates for either the national polls or the state election goes above 16 in which case additional polling officers are stationed.[40]

The voting procedure within a polling station is modified to allow for two separate electronic voting machines (EVM) that record votes for the state and national elections, respectively. To ensure that voters can identify the EVM for national and state elections, distinct color self-adhesive stickers that contain the words, "Lok Sabha" (or national election) or "Legislative Assembly" (state election) are pasted on the balloting unit, and the control unit, in the most widely spoken language in the area and in English.[41] If a state has multiple phases, the election for both AC and PC happen on the same state should they be synchronized.

B CSDS-Lokniti survey data Description

The Lokniti Program at Centre for the Study of Developing Societies (CSDS) has been conducting representative sample surveys since 1996 at the time to

[39] Refer to Volume 2: Compendium of Instructions, https://bit.ly/3bk9xM2; last accessed 28th January 2020.

[40] The electronic voting machines can cater to a maximum of 64 candidates (M2 EVMs, 2006 - 2013) or 384 candidates (M3 EVMs, post-2013) including a NOTA (none of the above) option. There are provisions for 16 candidates in a single balloting unit. https://bit.ly/2S4H05W; last accessed 28th January 2020.

[41] https://bit.ly/2S3toaP; last accessed 28th January 2020.

elections to study voter behavior at the National and State levels. Lokniti program has a long standing tradition of conducting election surveys with transparent methodology and sample selection over a long period in time. We employ the post-poll surveys for each of the national and state assembly election conducted by Lokniti from 1996. The objective of the surveys are to map the behavior and opinion of Indian voter and help explain the electoral outcome. All post-poll surveys are conducted in a single wave in the period (48 hrs) between completion of polling and the start of counting before declaration of the results.

Departing from the prevailing practice of outsourcing the surveys to external agencies, the survey and faculty team of the Lokniti network spread across all states are directly in-charge of recruiting, training and supervision of the field work. The processing and assembling of the data is centrally managed in the national headquarters in Delhi. All surveys are conducted with a rigorous practice of carefully translating the survey schedules into over 22 major languages spoken in India and paying careful attention to the local dialects. The questionnaires are administered each time after thorough and rigorous debates within the Lokniti network and through a pilot sample in the neighboring states of Delhi. The final questionnaire is prepared after roughly 10 drafts.

The sample is drawn using a four-stage stratified random sampling. In the first stage, parliamentary constituencies are sampled. In the larger states where there are 40 or more constituencies, a sample from the among the constituencies was chosen by simple circular sampling. The second stage is the sampling of assembly segments that form a part of the parliamentary constituencies conducted using random circular sampling (probability proportionate to the size of electorate in each constituency as per the last available election records for the state). This number varies from state to state – from two in most of the big states to five in some of the smallest states – but remained constant within a state and was selected to yield an appropriate number of polling stations and respondents.

The third state is the sampling of polling stations areas within each sampled assembly constituency. The selection of polling stations is done by a systematic random sample procedure from the list of polling stations in serial order followed by the Election Commission. The fourth and final stage in the sampling is the selection of respondents. The electoral rolls of the sampled polling stations were obtained from the office of the chief election officer of the state or the district election office. In every polling station, usually 15 or 10 respondents

are chosen from the electoral rolls by circular sampling with a random start. The field investigators are given a list of sampled respondents containing their name, age, gender and address and are asked to approach them. Additionally, taking time constraints into account, a substitution of the respondent is allowed if the surveyor is unable to meet the person after more than two attempts. The substitution is only permissible under two conditions, the substitute had to be from the sample family and the same gender as the respondent being replaced. In NES 2004, the surveyors achieved a success rate of 77%. Better representativeness has been done over the years by reducing the sample size at the primary sampling unit so as to reduce the cluster effect. The respondents are asked in the questions in the local language and the voting preferences are further collected using dummy secret ballots and dummy ballot boxes as used during the actual elections in the polling stations.

The national election surveys have been conducted on average with 25 states and union territories. While the state election surveys have been conducted for almost all of the state assembly elections. The sampling procedures remain the same for both national and state election surveys. The selection of questions for each survey round is updating to keep in mind the current socio-economic-political situation. For our analysis, the questions were selected using two criteria, first, the question should be consistently asked across national and state surveys and over the years so as to construct a representative panel data and second, the question should help in understanding some mechanism of the voter behavior.

C Robustness

Table A2 presents various robustness tests on the estimated probability for the 180-day sample. Column 1 presents the result replicated from Column 6, Table 3 for easier comparison, while the remaining columns address different robustness tests. Although the introduction of PC fixed effects allows to address the cross-sectional selection problem, it may be that there are unobserved differences in the nature of political competition or voters preferences across ACs within a given PC. To overcome this concern, we compare outcomes within an AC over time by using AC fixed effects (Column 2). This inclusion results in a marginal decrease in the estimate by 0.2 percentage points, suggesting that there

may not be large unobserved differences across these ACs within a PC that is driving our main effect.

One may also argue that there are differences across PCs within each state over time. For instance, a PC in the 1999 national election cycle may be very different in terms of its voter composition, and other unobserved temporal differences, with the same PC in the year 2004. This may potentially be the reason behind differences in the win probability for the same political party. To account for such differences at the PC level we interact the PC fixed effects with a continuous variable denoting the gap in years since the first election for each PC (column 3). This removes any potential trend in changing voter preferences for synchronized representation. The inclusion of PC level time trends drop the estimated coefficient to 6 percentage points, but is still statistically significant. Similarly, we include these time trend interactions at the AC level (column 4), and find identical point estimates, albeit with a larger standard error, still significant at the 5% level.

The next set of estimates (columns 5-8) in Table A2 present the coefficients for changes to the data sample. We look at a pre-2008 delimitation sample that presents the longest time variation for a stable set of PCs and ACs, and find that the coefficient estimate is 1.3 percentage points lower than in our baseline specification, however, still robust and large. Exclusion of electorate size weights in the regression estimates yield lower estimates at 7.6 percentage points, statistically significant at the 1% level.

While a majority of the state elections happened within the 180 days after the national elections, we test if inclusion of state elections within the 180 days interval before the national elections affect our point estimates (Column 8), and do not find any meaningful changes to the baseline estimates. Lastly, we now test if the state elections which were synchronized or non-synchronized with the national elections were strategically dissolved before it ran its full term/cycle by the incumbent party. This strategy could either benefit or harm the incumbent depending on the incumbent party at the national level, and the overall seat composition of the state. We find exclusion of such strategic state elections which could potentially be endogenous actually increases our point estimates suggesting that our estimates, if anything, is a lower bound of the true estimated effect of synchronization.

We estimate the synchronization effect for the sub-sample where we observe

more geo-spatial characteristics from the SHRUG database (Asher, Lunt, Matsuura, and Novosad, 2019), and show that the estimated effects are meaningfully large (Appendix Table A3). Since our dependent variable is bound to be 0 or 1, we re-estimate our main specification in Panel B, Table 3 as a logit specification, and find stronger estimates to the average propensity to win both AC and PC by the same political party (Appendix Table A4). The log(odds ratio) is about 0.14, and statistically significant. Importantly, the predictions from the linear probability model in Table 3 are all within the support of the dependent variable, i.e., 0 and 1, except for predictions for 0.34% (22 observations) of the 180-day sample. These falsification assessments and are confident that the effects are not driven primarily by additional unobserved differences between synchronized and non-synchronized elections.

Finally, to alleviate concerns of a relatively small number of clusters (40 in the 180-day sample, and 169 in the all days sample) in estimating clustered standard errors, we re-estimate the standard errors using a wild-cluster bootstrap methodology and find the coefficients to be significant at the 5% level (Appendix Table A5).

Randomized Inference: We test whether our main results can be obtained when synchronization status is randomly varied across different elections. We randomize the synchronization status assignment within each state across state election years 10,000 times, and re-estimate our coefficient of interest. Appendix Figure A1 plots the empirical distribution of the estimated coefficients. The dotted lines represent the 5% and 10% two-tail confidence levels, and the blue dashed lines represent the coefficient estimates in our data. We find that the distribution are centered around zero, and our estimated coefficients are above the 5% confidence level. The simulations results confirm our belief that our point estimates were not a result of chance.

D Synchronization and the Voting Environment

Effects on Voting Environment: Our core finding in this paper is that the probability that the same political party wins both PC and AC is higher when elections are synchronized. This significant consequence of synchronized elections may not occur in isolation and characterizing the environment in which voters take such decisions may shed further light on this phenomenon. We carefully

document the changes to the voting environment in this section.

In synchronized elections, voters need to pick two candidates, one each for the national parliament and state assembly respectively. When elections are synchronized, voters need to pick both these candidates at the same time, and need not do so when elections are non-synchronized.

Table A9 presents the regression estimates for the 180-day sample, for an array of variables that characterize the environment, and the choice set across both synchronized and non-synchronized elections.

Column (1) of Table A9 presents the effect of synchronization on the logarithmic value of total number of contestants in the elections, Column (2) the effect on the logarithmic value of total number of contestants with explicit party affiliations, Column (3) a measure of electoral competitiveness – the log transformation of the effective number of parties in contest[42], Column (4) the election turnout, and Column (5) the win margin in the elections. Panel A presents estimates for state elections and Panel B for national elections. The first row in each panel presents the coefficient of interest, and the next set of rows present the mean of the dependent variable, and the number of state elections, and observations respectively.

Synchronized elections are different from non-synchronized ones in the number of contestants (Column 1, Panel A), but not by the number of parties in state elections (Column 2, Panel A). The average number of candidates is around 11 per AC, and the number of candidates with explicit party affiliation, around 6. However, in national elections, the number of contestants fall by around 5, from 17 candidates to 12. Most of this drop in number is captured by the fall in the number of independent candidates, as the number of candidates with explicit party affiliation is smaller at 6, falling to 5 in synchronized elections. The additional fall, over an above the drop in the number of independent candidates can be accounted by coalition formation. In general, while the number of political parties in play in both national and state elections are similar in both synchronized and non-synchronized elections, the fall in the number of independent candidates in synchronized elections is noteworthy.[43]

[42] ENOP is defined as the inverse of the sum of squared vote shares received by each candidate in the election.

[43] Appendix Table A10 decomposes the number of candidates into national, state and unrecognized parties, and independent candidates. The decomposition shows that much of the drop in the number of candidates come from independent candidates.

Column (3) presents the synchronization effect on a measure of electoral competitiveness, the effective number of parties. The effective number of parties in contest, on average is three for both state and national elections. Although this number rises by 4 percentage points, the change is not economically meaningful. In other words, the contest remains roughly a three way one in both national and state elections, whether or not they are synchronized.

Column (4) presents synchronization effects on turnout in these elections. The turnout in state elections are around 58 percent and are no different for synchronized elections. However, the turnout in the national elections increases significantly, when elections are synchronized. This suggests that state elections are equally – if not more – important for the average Indian of voting age than national elections. When elections are synchronized, the effort to vote in national elections are no higher since the design of the polling station reduces the transaction costs of voting in both elections. The increase in turnout for national elections when synchronized suggests that national elections piggy-back on the popularity of voters desiring to express their choice for state elections, than the other way around. This additional 5 percentage point increase in turnout can also be associated with the fact that transaction costs are low to vote in both elections.

Column (5) tests whether the win margin is significantly different for synchronized elections. We find that the win margin is not statistically any different between synchronized and non-synchronized elections.

Taken together, the effective voting environment is not very different except for a significant drop in the number of independent candidates, and an increase in turnout for national elections on the back of the general popularity of state elections.

E Calculation of Share of Voters with "Preference Rationale"

A voter i using the "preference" rationale would vote for A if

$$\lambda_i(u_1(P^A) - u_1(P^B)) + (1 - \lambda_i)(u_2(\theta^A) - u_2(\theta^B)) \geq 0$$

We define $z \equiv (u_2(\theta^A) - u_2(\theta^B))$. Given that both $u_2(\theta^A)$ and $u_2(\theta^B)$ follow uniform distribution, z also follows a uniform distribution. Specifically,

$$z \sim U[-(\bar{u}_2 - \underline{u}_2), (\bar{u}_2 - \underline{u}_2)]$$

Therefore, the probability that a voter i using the "preference" rationale would vote for A is given by

$$\begin{aligned} r^A(\lambda_i) &= \mathbb{P}\left[z \geq -\frac{\lambda_i}{1-\lambda_i}(u_1(P^A) - u_1(P^B))\right] \\ &= 1 - \frac{-\frac{\lambda_i}{1-\lambda_i}(u_1(P^A) - u_1(P^B)) + (\bar{u}_2 - \underline{u}_2)}{2(\bar{u}_2 - \underline{u}_2)} \\ &= \frac{1}{2}\left[1 + \frac{\frac{\lambda_i}{1-\lambda_i}(u_1(P^A) - u_1(P^B))}{(\bar{u}_2 - \underline{u}_2)}\right] \leq 1 \end{aligned}$$

where the last inequality follows from equation (4). The set of voters who use the "preference" rationale is given by $\lambda_i \leq \bar{\lambda}$. Therefore, the vote share of candidate A in the mass of voters using the "preference" rationale is given by

$$s^A = \int_0^{\bar{\lambda}} r^A(\lambda_i)\frac{f(\lambda_i)}{F(\bar{\lambda})}d\lambda_i = \frac{1}{2}\left[1 + \frac{\mathbb{E}\left[\frac{\lambda_i}{1-\lambda_i} \mid \lambda_i \leq \bar{\lambda}\right](u_1(P^A) - u_1(P^B))}{(\bar{u}_2 - \underline{u}_2)}\right]$$

Therefore, for any mass of voters using the "preference" rationale, s^A is the share of such voters who vote for candidate A.

F Proofs of Results

F.1 Result 1

Proof: The fraction of voters who use "party" rationale in E (the election with cheaper information cost), when held sequentially with $E^{'}$, is given by

$$f^{E,seq} = (1 - F(\bar{\lambda}(\kappa))).$$

When the elections E and $E^{'}$ are synchronized, the same fraction is given by

$$f^{E,sync} = (1 - F(\bar{\lambda}(\kappa^{'}))).$$

Since $\bar{\lambda}(\kappa^{'}) < \bar{\lambda}(\kappa)$, we get $(1 - F(\bar{\lambda}(\kappa^{'}))) > (1 - F(\bar{\lambda}(\kappa)))$. For election $E^{'}$, we know that $f^{E^{'},seq} = f^{E^{'},sync} = (1 - F(\bar{\lambda}(\kappa^{'})))$. Hence, there is no change in the fraction for $E^{'}$. ■

F.2 Result 2

Proof: The only change in the extent of split-ticket voting between synchronized and sequential elections is due the voters with $\lambda_i \in (\bar{\lambda}(\kappa^{'}), \bar{\lambda}(\kappa))$ changing their rationale for voting. Extent of split-ticket voting for the set of voters $\lambda_i \notin (\bar{\lambda}(\kappa^{'}), \bar{\lambda}(\kappa))$ is same across the two types of election timing, as their rationale for voting don't change. For the set of voters with $\lambda_i \in (\bar{\lambda}(\kappa^{'}), \bar{\lambda}(\kappa))$, the fraction of voters who vote for A in $E^{'}$ is one. If E is held simultaneously with $E^{'}$ then all voter in that set also vote for A in election E. Therefore, all voters in the set engage in straight-ticket voting. However, if E and $E^{'}$ are held sequentially, then only a fraction of voters in that set vote for A in election E. The fraction is given by

$$\frac{\mathbb{E}[r^A(\lambda_i) \mid \lambda_i \in (\bar{\lambda}(\kappa^{'}), \bar{\lambda}(\kappa))]}{F(\bar{\lambda}(\kappa))) - F((\bar{\lambda}(\kappa^{'}))} < 1$$

where

$$r^A(\lambda_i) \;=\; 1 - \frac{-\frac{\lambda_i}{1-\lambda_i}(u_1(P^A) - u_1(P^B)) + (\bar{u}_2 - \underline{u}_2)}{2(\bar{u}_2 - \underline{u}_2)}$$

Hence, the result follows. ■

F.3 Result 3

Proof: Probability that party 1 wins both elections when elections are sequential is given by:

$$\Pi^{seq} = \pi^A \pi^{A^{'}} = (4v^A - 1)(4v^{A^{'}} - 1)$$

where v^A is as defined before and $v^{A^{'}}$ is defined analogously. Now,

$$\begin{aligned} v^A \;&=\; (1 - F(\bar{\lambda}(\kappa))) + F(\bar{\lambda}(\kappa)) \int_0^{\bar{\lambda}(\kappa)} r^A(\lambda_i) \frac{f(\lambda_i)}{F(\bar{\lambda}(\kappa))} d\lambda_i \\ &<\; (1 - F(\bar{\lambda}(\kappa))) + \int_0^{\bar{\lambda}(\kappa^{'})} r^A(\lambda_i) f(\lambda_i) d\lambda_i + \int_{\bar{\lambda}(\kappa^{'})}^{\bar{\lambda}(\kappa)} f(\lambda_i) d\lambda_i \end{aligned}$$

$$= (1-F(\bar{\lambda}(\kappa)))+\int_0^{\bar{\lambda}(\kappa')} r^A(\lambda_i)f(\lambda_i)d\lambda_i+(F(\bar{\lambda}(\kappa))-F(\bar{\lambda}(\kappa')))$$

$$= (1-F(\bar{\lambda}(\kappa')))+F(\bar{\lambda}(\kappa'))\int_0^{\bar{\lambda}(\kappa')} r^A(\lambda_i)\frac{f(\lambda_i)}{F(\bar{\lambda}(\kappa'))}d\lambda_i$$

$$= v^{A'}$$

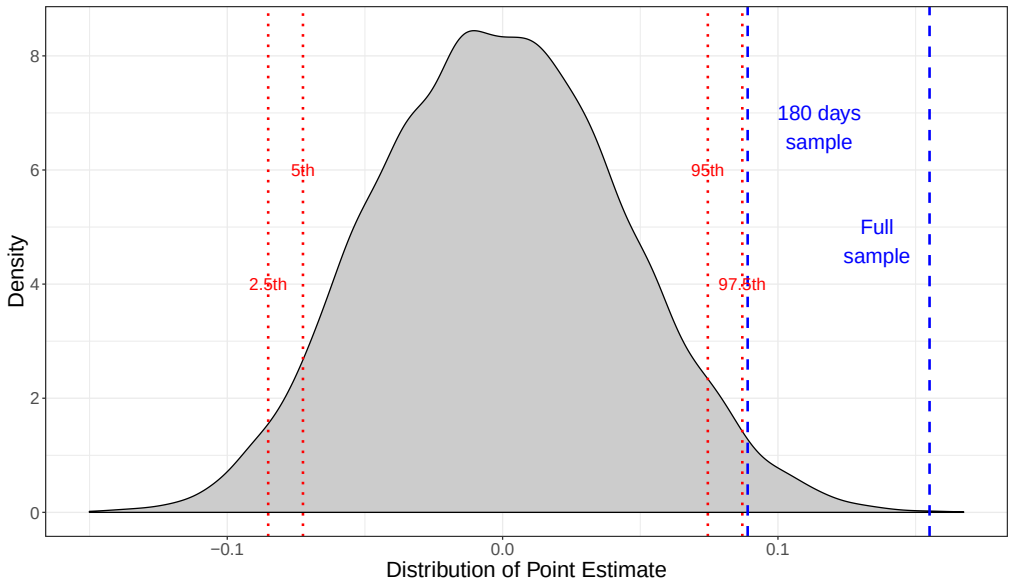
Here the first inequality is given by the fact that $r^A(\lambda_i) \leq 1$ for all $\lambda_i \leq \bar{\lambda}(\kappa)$ and $r^A(\lambda_i) < 1$ for all $\lambda_i \leq \frac{1}{2}$ (since $(u_1(P^A) - u_1(P^B)) < (\bar{u}_2 - \underline{u}_2)$ by assumption). To complete the proof we notice that the probability that party 1 wins both elections under synchronized elections is given by

$$\Pi^{sync} = \pi^{A'}\pi^{A'} = (4v^{A'} - 1)^2 > \Pi^{seq}.$$

■

G Appendix Tables and Figures

Figure A1. Simulated Distribution of the Point Estimate of Interest



Notes: This figure plots the empirical probability density function of the γ coefficient estimated using Equation 8 on 10,000 replicates simulated by randomly assigning synchronisation in our dataset. The red lines mark the 2.5th, 5th, 95th and 97.5th percentile of the distribution, and the dashed (blue) line represent the estimated coefficient for the full sample and the main sub-sample with 180 days as in Table 3.

Figure A2. Prob(Same Party Wins PC and AC): Full Sample

(a) Sync = 0 **(b)** Sync = 1

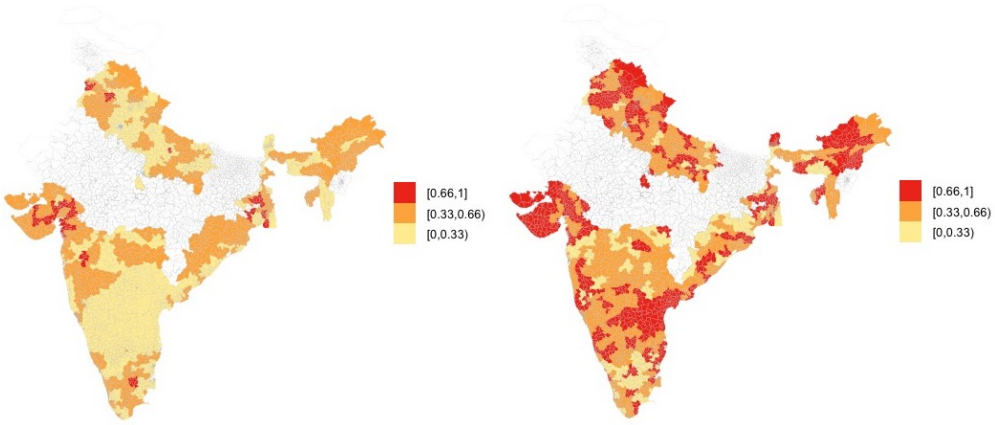


Figure A3. Prob(Same Party Wins PC and AC): 180 Days Sample

(a) Sync = 0 **(b)** Sync = 1

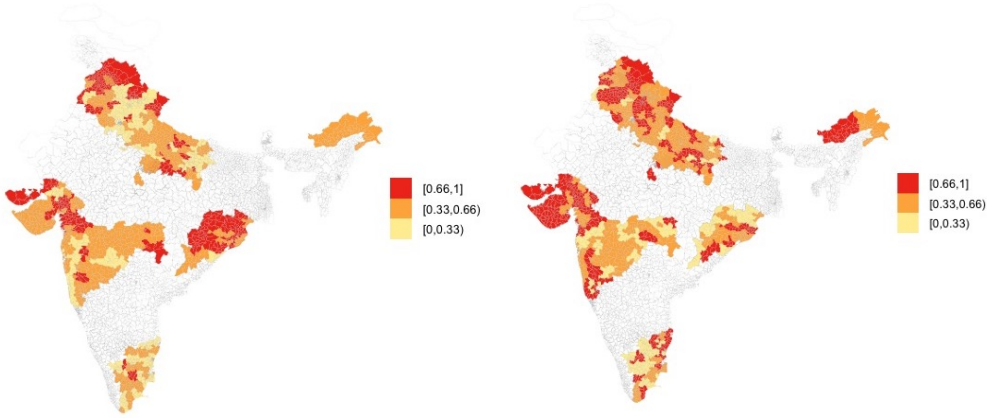


Table A1—Balance Statistics

	Unconditional Mean		Regression	N
	Sync = 1	Sync = 0	Coefficient	
	(1)	(2)	(3)	(4)
Panel A: Assembly Elections				
Share of SC Population	0.182	0.169	0.001	1973
Share of ST Population	0.093	0.094	0.000	1973
Share of Rural Population	0.851	0.841	−0.001	2047
Share of Literate Population	0.479	0.520	−0.003***	1973
Area of Town (sq. km)	36.623	20.430	26.428*	1457
Area of Village (sq. km)	35.586	37.032	4.438	2047
Panel B: General Elections				
Share of SC Population	0.179	0.172	−0.001	788
Share of ST Population	0.078	0.073	0.004	788
Share of Rural Population	0.85	0.844	0.000	791
Share of Literate Population	0.472	0.519	−0.003***	788
Area of Town (sq. km)	32.610	20.277	21.639*	720
Area of Village (sq. km)	37.382	39.819	2.813	791

Notes: This table presents balance statistics between constituencies that had synchronized elections (Column 1) and those that do not (Column 2). Column 3 presents the regression coefficient for each outcome variable (in rows) on a dummy that takes the value 1 if the state assembly constituency had concurrent elections with parliamentary constituency elections, and 0 otherwise. The sample includes unsynchronized assembly elections that happen within 180 days after the general election. The regression includes parliamentary constituency (Panel A), state fixed effects (Panel B), and GE-Year fixed effects. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency (Panel A) and parliamentary constituency (Panel B). ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table A2—Robustness

	Dep. Var.: I(Same Party = 1)							
	Econometric Specification				**Data Sample**			
	PC FE	AC FE	PC Time Trends	AC Time Trends	Pre 2008 Delimitation	Without Weights	-180 to +180	Strategic Dissolution
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
I(Sync = 1)	0.089***	0.087***	0.060***	0.060**	0.076**	0.076**	0.091***	0.114***
	(0.029)	(0.032)	(0.018)	(0.024)	(0.030)	(0.033)	(0.028)	(0.029)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	PC	AC	PC	AC	PC	PC	PC	PC
Time-Trends			PC	AC				
GE-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean Dep. Var.	0.42	0.42	0.42	0.42	0.44	0.45	0.42	0.42
Number Clusters	40	40	40	40	33	40	53	39
Number States	10	10	10	10	10	10	13	10
Observations	6,410	6,410	6,410	6,410	5,505	6,410	6,851	6,264

Notes: Column 1 presents the second-to-last column of Panel (B), Table 3 for comparison to various robustness exercise in this table. Various econometric specification tests – with AC fixed effects (Column 2), PC time trends (Column 3), AC time trends (Column 4) account for potential unobserved variation. We use data only until 2008 in order to restrict the sample before the Election Commission of India implemented the delimitation exercise to redraw constituency boundaries (Column 5). Columns 6 and 7 present results without electorate size weights, and accounting for elapsed time without specific ordering of GE and AE. Column 8 presents results after removing those assembly-general election pairs where the state assembly did not complete its constitutional term while the national parliament completed its term. All regressions control for the reservation status of the constituency. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table A3—Synchronization Effects on Win Probability
(Balance Statistics Sub-sample)

	Dep. Variable: I(Same Party = 1)				
	(1)	(2)	(3)	(4)	(5)
I(Sync = 1)	0.089***	0.048**	0.048**	0.056**	0.056**
	(0.029)	(0.022)	(0.022)	(0.025)	(0.025)
AC Reserved	0.034	0.062	0.064*	0.084**	0.083**
	(0.021)	(0.038)	(0.038)	(0.042)	(0.041)
PC Reserved	−0.0002	−0.099	−0.099	−0.053	−0.056
	(0.076)	(0.182)	(0.182)	(0.156)	(0.160)
AC: Share of Literate Population		0.062	−0.042	−0.156	−0.043
		(0.182)	(0.138)	(0.279)	(0.292)
AC: Share of Rural Population			−0.174	−0.273**	−0.261**
			(0.106)	(0.111)	(0.114)
AC: Share of SC Population				0.300	0.371
				(0.494)	(0.509)
AC: Share of ST Population					0.162
					(0.176)
AC Reserved x PC Reserved	−0.032	−0.056	−0.060	−0.058	−0.060
	(0.042)	(0.090)	(0.090)	(0.101)	(0.101)
PC FE	Yes	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes	Yes
Mean Dep. Var.	0.42	0.39	0.39	0.38	0.38
Number Clusters	40	17	17	17	17
Number States	10	6	6	6	6
Observations	6,410	1,973	1,973	1,449	1,449

Notes: Standard errors are clustered at the State GE-Year level. The estimates are weighted by the size of the electorate for the AE constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table A4—Logistic Regression

Dep. Variable: Odds Ratio for I(Same Party = 1)			
	(1)	(2)	(3)
I(Sync = 1)	1.458***	1.389***	1.399***
	(0.213)	(0.207)	(0.207)
PC FE	Yes	Yes	Yes
GE-Year FE		Yes	Yes
Controls			Yes
Mean Dep. Var.	0.42	0.42	0.42
Number Cluster	40	40	40
Number States	10	10	10
Observations	6,410	6,410	6,410

Notes: The table restricts the time elapsed between the general election and assembly election to less than 180 days. The control variables includes reservation status of the constituency (AE Reserved, GE Reserved and AE Reserved x GE Reserved). Standard errors are clustered at the State GE-Year level. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table A5—Synchronization Effects on Win Probability (Wild Clustered Bootstrap)

	Dep. Variable: I(Same Party = 1)					
	All days sample			**180 days sample**		
	(1)	(2)	(3)	(4)	(5)	(6)
I(Sync = 1)	0.176***	0.155***	0.155***	0.096**	0.089**	0.089**
	(0.044)	(0.037)	(0.037)	(0.041)	(0.038)	(0.038)
PC FE	Yes	Yes	Yes	Yes	Yes	Yes
GE-Year FE		Yes	Yes		Yes	Yes
Controls			Yes			Yes
Mean Dep. Var.	0.41	0.41	0.41	0.42	0.42	0.42
Number Clusters	169	169	169	40	40	40
Number States	21	21	21	10	10	10
Observations	24,018	24,018	24,018	6,410	6,410	6,410

Notes: Columns 1, 2 and 3 includes all state assembly election-general election pairs within zero and five years of time difference. The time difference is computed as the days elapsed since the general election for the next assembly election within five years. Columns 4, 5, and 6 restricts the time elapsed between the general election and assembly election to less than 180 days. The control variables includes reservation status of the constituency (AE Reserved, GE Reserved and AE Reserved x GE Reserved). Wild clustered standard errors at the State GE-Year level are in parantheses, and estimates are weighted by the electorate size of the state assembly constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table A6—Placebo: Comparing Effect Sizes for Different Time Period

	Dep. Variable: I(Same Party = 1)	
	1 to 90 vs 120 to 180	60 to 120 vs 120 to 180
	(1)	(2)
I(Sync Placebo = 1)	0.002	−0.003
	(0.055)	(0.066)
Controls	Yes	Yes
PC FE	Yes	Yes
GE-Year FE	Yes	Yes
Mean Dep. Var.	0.42	0.45
Number Clusters	63	91
Number States	7	10
Observations	4,553	5,319

Notes: This table documents the difference in the joint probability of winning both elections when they happen within 1 day – 3 months and 4 – 6 months of time difference (Column 1); and similarly for Column 2 (between 2–4 months and 4–6 months). All regressions control for reservation status of the constituency. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table A7—Synchronization Effects by Party Type

	Dep. Var.: I(Same Party = 1 & Party is)			
	National	State	Unrecognized	Independent
	(1)	(2)	(3)	(4)
I(Sync = 1)	−0.005	0.077***	0.014**	0.003**
	(0.030)	(0.028)	(0.006)	(0.001)
Controls	Yes	Yes	Yes	Yes
PC FE	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes
Mean Dep. Var.	0.35	0.07	0.001	0
Number Clusters	40	40	40	40
Number States	10	10	10	10
Observations	6,410	6,410	6,410	6,410

Notes: A political party is defined as national, state or unrecognized by the Election Commission of India. We use this definition to define dependent variable as the joint probability of winning both elections and being one of these party-types in each column. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table A14—Synchronization Effects on Vote Share Gap

	Dep. Variable: Party Vote Share Gap			
	AC Level		PC Level	
		Same Party $\neq 0$		Same Party $\neq 0$
	(1)	(2)	(3)	(4)
I(Sync = 1)	−0.025***	−0.017***	−0.037***	−0.032***
	(0.004)	(0.003)	(0.004)	(0.004)
Controls	Yes	Yes	Yes	Yes
Party FE	No	No	Yes	Yes
PC FE	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes
Mean Dep. Var.	0.09	0.07	0.07	0.07
Number Clusters	40	40	40	40
Number States	10	10	10	10
Observations	17,597	9,293	3,810	3,386

Notes: This table presents the effect of synchronization on the absolute gap in the vote share of various political parties between PC and AC at the AC level (Columns 1–2) and PC level (Columns 3–4). Columns 2 and 4 condition the sample to only when the same political party does not emerge as the winner in both PC and AC. All regressions control for the reservation status of the constituency. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table A8—Synchronization Effects by Incumbency

Panel A:	Dep. Variable: I(Party is Incumbent from)			
	Centre Govt.	State Govt.	Local PC	Local AC
	(1)	(2)	(3)	(4)
I(Sync = 1)	−0.036	0.058	−0.244***	0.017
	(0.100)	(0.069)	(0.078)	(0.061)
Mean Dep. Var.	0.24	0.32	0.30	0.36
Panel B:	Dep. Variable: I(Same Party = 1 & Party is Incumbent from)			
	Centre Govt.	State Govt.	Local PC	Local AC
	(1)	(2)	(3)	(4)
I(Sync = 1)	−0.008	0.121***	−0.078*	0.049
	(0.051)	(0.043)	(0.043)	(0.033)
Mean Dep. Var.	0.10	0.12	0.16	0.13
Controls	Yes	Yes	Yes	Yes
PC FE	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes
Number Clusters	40	40	40	40
Number States	10	10	10	10
Observations	6,410	6,410	6,410	6,410

Notes: Panel A present the estimates for the probability being an incumbent government at the central level (Column 1), at the state level (Column 2), at the PC level (Column 3) and the AC level (Column 4). Panel B present the estimates for the joint probability of winning both elections and being an incumbent government at the central level (Column 1), at the state level (Column 2), at the PC level (Column 3) and the AC level (Column 4). Standard errors are clustered at the State-GE Year level, and estimates are weighted by the electorate size of the state assembly constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table A9—Synchronization Effects on Other Electoral Outcomes

	Dep. Variable:				
	log(# Contestants)	log(# Parties)	log(ENOP)	Turnout	Win Margin
	(1)	(2)	(3)	(4)	(5)
Panel A: State Assembly Elections					
I(Sync = 1)	0.202*	−0.0005	0.106***	0.003	−0.011
	(0.111)	(0.062)	(0.029)	(0.008)	(0.007)
Mean Dep. Var.	10.17	5.37	3	0.58	0.08
Number AE	40	40	40	40	40
Observations	6,077	6,068	6,397	6,399	6,385
Panel B: National Elections					
I(Sync = 1)	−0.203***	−0.108***	0.138***	0.051***	−0.009
	(0.040)	(0.036)	(0.020)	(0.009)	(0.009)
Mean Dep. Var.	17.36	6.3	2.78	0.55	0.09
Number GE	9	9	9	9	9
Observations	1,435	1,435	1,774	1,775	1,751
Controls	Yes	Yes	Yes	Yes	Yes
PC FE	Yes	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes	Yes
Number States	10	10	10	10	10

Notes: This table presents the effect of synchronized elections on other electoral outcomes for state assembly elections (Panel A) and national elections (Panel B). Column (1) across both panels document the effect on number of contestants, Column (2) on number of parties, Column (3) on the Effective Number of Parties (ENOP), Column (4) on the fraction of electorate turnout and Column (5) on the win margin. ENOP is defined as the inverse of the sum of squared-vote shares for each election contestant at the constituency level. All regressions control for the reservation status of the constituency. The mean dependent variable reports the mean without logarithmic transformation for Columns (1,2,3). Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table A10—Synchronization Effects on Number of Candidates

	Dep. Variable: log(# Contestants)			
	Total	National Party	State and Unrecognized Party	Independent
	(1)	(2)	(3)	(4)
Panel A: State Assembly Elections				
I(Sync = 1)	0.202*	0.331	−0.344	0.292
	(0.111)	(0.230)	(0.279)	(0.281)
Mean Dep. Var.	10.17	2.74	2.61	4.71
Number AE	40	40	40	40
Observations	6,077	6,410	6,068	6,410
Panel B: General Elections				
I(Sync = 1)	−0.195***	0.332***	−1.220***	−0.586***
	(0.045)	(0.127)	(0.228)	(0.198)
Mean Dep. Var.	17.02	2.74	3.39	10.13
Number GE	9	9	9	9
Observations	808	993	808	993
Controls	Yes	Yes	Yes	Yes
PC FE	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes
Number States	10	10	10	10

Notes: This table presents the effect of concurrent elections on number of candidates for state assembly elections (Panel A) and general elections (Panel B). Column (1) across both panels document the effect on total number of contestants, Column (2) on national party candidates, Column (3) on the state and unrecognised party candidates and Column (4) on independent candidates. All regressions control for the reservation status of the constituency. The mean dependent variable reports the mean without logarithmic transformation for all columns. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table A11—Synchronization Effects by Party

Dep. Var.: I(Same Party = 1 & Party is)			
	National	INC	BJP
	(1)	(2)	(3)
I(Sync = 1)	−0.005	−0.027	−0.028
	(0.030)	(0.026)	(0.030)
Controls	Yes	Yes	Yes
PC FE	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes
Mean Dep. Var.	0.35	0.08	0.1
Number Cluster	40	40	40
Number States	10	10	10
Observations	6,410	6,410	6,410

Notes: A political party is defined as national, state or unrecognized by the Election Commission of India. We use this definition to define dependent variable as the joint probability of winning both elections and being the national party in the first column. The second and third columns are for Indian National Congress and Bharatiya Janata Party respectively. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table A12—Synchronization Effects with Coattail Elections

	Dep. Var.: I(Same Party = 1)	
	(1)	(2)
I(Sync = 1)	0.083***	0.090***
	(0.029)	(0.029)
I(Sync = 1) x I(Win Margin $\geq$ 75th percentile)	0.051	
	(0.043)	
I(Sync = 1) x I(Win Margin $\geq$ 90th percentile)		0.068
		(0.069)
Controls	Yes	Yes
PC FE	Yes	Yes
GE-Year FE	Yes	Yes
Mean Dep. Var.	0.42	0.42
Number Clusters	40	40
Number States	10	10
Observations	6,410	6,410

Notes: All regressions control for the reservation status of the constituency. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table A13—Synchronization Effects on Same Party Voting

	Voted for Same Party at AE and GE			
	(1)	(2)	(3)	(4)
I(Sync = 1)	0.069***	0.077***	0.066***	0.074***
	(0.007)	(0.026)	(0.020)	(0.023)
I(Sync = 1) x Age		−0.0002		
		(0.001)		
I(Sync = 1) x Female			0.006	
			(0.032)	
I(Sync = 1) x Education: Illiterate				−0.001
				(0.021)
I(Sync = 1) x Education: Below Matric				−0.013
				(0.043)
Controls	Yes	Yes	Yes	Yes
PC FE	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes
Mean Dep. Var.	0.56	0.56	0.56	0.56
Number Clusters	53	53	53	53
Observations	3,235	3,235	3,235	3,235

Notes: Standard errors are clustered at the State GE-Year level. Controls: Age (Column 2 only), log(Age) (Columns 1, 3 and 4); Female; Education: Illiterate, Below Matric; Social Category: SC, ST, OBC; Religion: Hindu, Muslim; Locality: Urban; Assets: Four Wheeler, Two Wheeler, TV. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table A15—Synchronization Effects on Vote Share Gap

	Dep. Variable: Party Vote Share Gap		
	All	National Party	State Party
	(1)	(2)	(3)
I(Sync = 1)	-0.025^{***}	-0.027^{***}	-0.012^{*}
	(0.004)	(0.003)	(0.007)
Controls	Yes	Yes	Yes
Party FE	Yes	Yes	Yes
PC FE	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes
Mean Dep. Var.	0.09	0.09	0.09
Number Cluster	40	40	40
Number States	10	10	10
Observations	17,597	9,386	8,211

Notes: This table presents the absolute gap in the vote share of various political parties between PC and AC by party type. All regressions control for the reservation status of the constituency. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.