Builders, Politicians, and Election Finance[*]

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Abstract: In many developing countries, politicians often turn to private firms for illicit election finance. In sectors where firms are highly regulated, politicians can exchange policy discretion or regulatory favors for financial support during elections. This article explores this dynamic by focusing on the role of the construction sector in India, a domain where regulatory intensity is high. Specifically, we argue that builders will experience a short-term liquidity crunch as elections approach because of their need to re-route funds to campaigns as a form of indirect election finance. We use variation in the demand for cement, the indispensable ingredient for construction, to investigate the presence of an electoral cycle in building activity consistent with this logic. Using a novel monthly-level dataset, we demonstrate that cement consumption does exhibit a political business cycle supportive of our hypothesis.

Keywords: elections; corruption; election finance; regulation; India

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In many democracies, particularly in the developing world where accountability and regulatory institutions are weak, reported election expenditures are believed to be a fraction of actual spending.[1] This chapter investigates the claim that private firms can serve as one important source of so-called black, or undocumented, money in elections. Building on the literature on the "regulation of entry," we theorize that the regulatory intensity of a sector is highly correlated with its rent extractive potential.[2] In other words, where firms are highly regulated by the state, politicians can exchange policy and regulatory discretion for monetary transfers from firms that can finance election expenditures. One such sector is construction, which depends heavily on the availability of land, an input that is often tightly controlled by state authorities.

In this chapter, we examine the connection between builders, politicians, and election finance in India. In recent years, India has been beset by concerns over the illicit financing of elections—cited by some prominent observers as the country's biggest source of corruption.[3] Given the regulatory intensity of the state with respect to land and the construction sector's cash-dependence, builders have an incentive to pay for election expenses on behalf of politicians through unreported transactions in exchange for regulatory and policy favors.[4] Indeed, a survey of firms conducted by KPMG reports that businesses perceive construction/real estate to be the single most corrupt industry in India.[5] As the journalist Saritha Rai succinctly noted: "Politics and real estate make for a cozy nexus—one a source of unaccounted cash and the other a conduit for expending the cash."[6]

The overarching goals of this chapter are two-fold. First, we seek to illustrate the cozy dynamics that exist between firms in the construction sector and politicians who regulate their

activity but also seek campaign contributions from them. Second, we empirically test whether there is an electoral cycle in the activity of builders that is consistent with this alleged quid pro quo. Specifically, we hypothesize that as elections approach builders will have to direct some portion of their financial assets to fund political campaigns. As a result of this transfer, builders will face a short-term liquidity crunch at the time of elections. Construction activity will therefore temporarily decline as money exits the sector to finance elections. The empirical challenge we face as researchers is to measure this effect given the lack of reliable data.

Our novel approach is to use unique data on cement consumption, which we use as a proxy for construction activity. Cement is the indispensable ingredient of the modern construction sector, for which there is no material substitute. The construction sector is comprised of two principal components: real estate and infrastructure. We refer to "builders" as shorthand for firms engaged in construction projects of either type. When construction activity increases, cement consumption rises and vice versa.[7] Empirically, we investigate whether the presence of elections is associated with an observable drop in cement consumption, consistent with shrinking liquidity in the construction sector around election time. To assess the relationship between elections and construction activity, we construct a panel dataset comprising information on the monthly consumption of cement and the timing of elections in India's 17 major states over the period 1995 to 2010. We exploit the staggering of state elections, which allows us to estimate a statistical model that controls for unobserved state and time-specific sources of variation.

We find that there is a statistically significant contraction in cement consumption during the month of state assembly elections. Furthermore, the contraction in cement consumption

varies in accordance with the character of the elections and in line with our theoretical expectations. We conduct a range of tests (described in the Appendix) to assess the robustness of this result. Having built confidence in our core finding, we address several plausible challenges to our interpretation of the results.

The chapter proceeds as follows. In the next section, we briefly summarize the literature on corruption and regulation. We then describe why the construction sector is particularly amenable to channeling black money for elections and present some stylized facts from the Indian case. In the third section, we summarize the logic of using cement consumption as a proxy for construction activity, present our hypotheses, and outline the data and methods we employ. Next, we present statistical evidence in support of our primary hypotheses on election timing and cement consumption and address the most plausible challenges to our interpretation of the findings. We conclude by summarizing the implications of our findings for the broader literature on democracy and elections.

Corruption and Regulation

There is a large literature in economics on the regulation of entry, effectively summarized by Djankov.[8] This literature comprises numerous studies examining the relationship between government regulation of start-up business operations and several outcome variables—such as entrepreneurship, productivity, and economic growth. The subset of this literature which has received the most attention, however, is that which examines the relationship between regulation and corruption. Numerous cross-national studies have found that countries with heavier regulation of entry experience greater levels of corruption.[9]

As Djankov et al. and Djankov state, most of the studies in this area build on the theoretical foundations rooted in public choice theory, which views regulation as inefficient and harmful for social welfare.[10] The mechanism we test for in this chapter is consistent with what Djankov et al. call the "tollbooth" view of regulation. According to this view, the prime beneficiaries of regulation are neither firms nor consumers, but politicians—or the individuals making the regulations.[11] Politicians can use their discretionary powers to exchange favorable regulatory dispensation in exchange for rents. As Shleifer and Vishny write: "An important reason why many of these permits and regulations exist is probably to give officials the power to deny them to collect bribes in return for providing the permits."[12] Covering campaign costs on behalf of politicians represent one specific manifestation of such rents. While firms do pay a cost when it comes to excessive regulation, politically connected firms can still reap benefits from the fact that regulation can be used to ward off potential competition.[13]

Builder-Politician Nexus

If regulatory intensity is correlated with corruption and rent-seeking, there is an *a priori* reason to expect that the construction sector will be a hotbed for such activity. Of course, this does not imply that construction is the *only* industry that acts as a conduit for black money that might be linked to elections. For instance, related work by Sukhtankar on India has shed light on the links between two other highly regulated sectors—sugar and telecommunications—and the illicit financing of politics.[14]

Nevertheless, the comparative literature is strewn with examples of a widespread affinity between the construction industry and politicians, or what is often described as the

"builder-politician nexus." For example, one study of 166 corporate bribery cases reveals that construction was the single most bribe-laden industry in the entire sample.[15] Chubb's classic study of Palermo, Sicily describes how local politicians seeking to rebuild the city following World War II used their regulatory leverage to provide preferred access to builders in exchange for campaign contributions.[16] Authors have described similar scenarios in settings as diverse as the Philippines, Spain, and machine-era America.[17]

The reasons behind this close association are straightforward. For starters, the construction sector requires access to adequate land, which is intensely politically and bureaucratically regulated in many countries.[18] Firms are under intense pressure to acquire land, obtain permissions to utilize the land for their intended purposes, and procure licenses for the actual execution of proposed projects. One of the key implications of this nexus is that builders have an incentive to serve as financiers of elections. Figure 1 presents the broad contours of this hypothesized quid pro quo, described below.

[Insert Figure 1 here]

As a result of the regulatory intensity of land, politicians wield an enormous amount of discretion over business activity in sectors for which land is a primary input. They can intervene on behalf of favored entities to expedite clearances and permits; grant waivers to existing regulations; or alter land use designations. Often time, direct intervention by politicians on behalf of firms need not be necessary to ensure a favorable outcome for preferred firms. When the links between firms and politicians are publicly known, it sends a strong signal to regulators:

enter at your own risk. The survival instincts of most government officials will ensure that acts of regulatory omission rather than commission will prevail.

Therefore, our hypothesis is that, as elections approach, builders will be compelled to finance some portion of politicians' campaign costs. Although this transaction imposes a short-term cost on builders, the transaction brings long-term benefits in terms of future goodwill.[19] The sector's regulatory intensity not only makes it a boon for filling campaign war chests but also provides politicians with a mechanism to enforce its "contract" with builders. As a result of this exchange, we hypothesize that builders will face a short-term liquidity crunch around elections because they must redirect funds to cover campaign costs, money which otherwise could have been used toward business investments.

The India Context

The stylized facts of the Indian case track nicely with the generalized theory. In India, the primary piece of legislation governing land acquisition (until 2013) was the Land Acquisition Act, written in 1894 by British colonial authorities. Although the Congress-led government revised the law in 2013, it did not materially diminish the role of the state in facilitating the acquisition of land. Indeed, the law governing land acquisition in conjunction with related laws, such as various land ceiling acts, have created a regulatory structure that empowers politicians and bureaucrats to manipulate control over land.[20] As a recent World Bank survey states, the management of India's land markets is replete with opportunities for rent-seeking due to the absence of four critical factors: a transparent system for land conversion; a clear definition of property rights; an effective system of land and property valuation; and a strong judicial system

for addressing grievances. Furthermore, the Indian government is a major owner of prime real estate, which provides it with additional leverage.[21]

Since independence, numerous attempts have been made to enact land reforms that would ostensibly reduce these discretionary powers. Yet, many of these efforts have been ridden with loopholes, since there is little incentive for politicians to alter the status quo given the benefits accrued under the current system.[22] The persistence of the bureaucratic morass dealing with land issues has served to consolidate entrenched methods of rent seeking.[23] As one longtime scholar of Indian politics has observed: "The discretionary power the state has with respect to land is the single biggest source of corruption in this country"[24]

According to the World Bank, out of 189 countries for which data is collected, India ranks 183 in terms of the ease of obtaining a construction permit.[25] A 2014 survey of transparency in 102 real estate markets around the globe places India in the middle of the pack (or "semi-transparent), at 40, 42, and 50 for Tier 1, 2, and 3 cities, respectively.[26] To provide a sense of how widespread the connection between politicians and builders is, Table 1 provides an illustrative list of four scandals that have made headlines in India in recent years. Each involves powerful politicians exercising the government's discretionary authority to favor selected firms looking to develop land.[27] We provide a more in-depth list of land-related political scandals in the Online Appendix.[28]

[Insert Table 1 here]

It is this regulatory intensity that accounts for the fact that many politicians are often

key players in the construction industry. Indeed, numerous politicians have taken a direct financial stake in the construction industry.[29] Because land is a valuable commodity and India's construction industry is booming, many politicians are believed to deposit a portion of their own financial assets with builders involved in construction.[30] One broker operating in the Delhi region revealed: "It's commonplace for politicians to park funds in real estate companies, as it's a safe avenue and fetches the highest return."[31] In addition to earning a decent return on their initial investment, politicians are also lured to the construction sector due to the sector's relative lack of transparency.[32] The recent history of the state of Maharashtra, for instance, contains numerous examples of powerful regional politicians with financial interests in construction.[33] Relatives of politicians often establish their own construction firms and reap the rewards from the value of their familial connections. A 2001 media investigation revealed that a quarter of ministers in the Gujarat state cabinet had familial or other close links with builders.[34] In other instances, politicians become covert backers of firms because they represent powerful entities whose support must be won and retained. As one Member of Parliament asked rhetorically: "Which builder will give you money during elections if his work is not done?"[35] Of more recent vintage is the proliferation of builders who use their wealth, largely accumulated on the basis of political patronage, to contest elections directly.[36] It is nearly impossible to be a successful real estate player in modern India without possessing a certain baseline level of political connections.[37]

What helps grease the wheels of this quid pro quo is the industry's heavy reliance on cash and non-bank forms of finance. According to a Planning Commission (2011a) estimate, a mere 1.4 percent of total gross bank non-food credit disbursed during the year 2010-2011 went

to the construction sector.[38] Yet, the sector as a whole accounts for over nine percent of India's Gross Domestic Product (GDP).[39] The industry's access to bank finance is limited for several reasons. First, the Reserve Bank of India (RBI) has imposed limits on the real estate exposure of a bank's lending portfolio due to concerns about speculative housing bubbles and the welfare of bank balance sheets.[40] Second, confusion over the role of state governments as facilitators in land acquisition has led to increasing litigation and bottlenecks, which add to the risk profile of builders.[41] Banks remain concerned about the lack of transparency in the construction sector, the legality of underlying land transactions, and inadequate safeguarding mechanisms to protect investments.[42] Third, there are few barriers to entry for builders seeking to join the marketplace; the industry lacks a unified regulator; and banks are reluctant to finance builders without established track records.[43] The Government of India estimates that small contractors execute over 90 percent of all construction projects across India; out of 3 million existing business units, only 28,000 are officially registered.[44]

The availability of liquid forms of finance is further bolstered by the fact that the sector has enjoyed a massive boom era over the past two decades. Between 2000 and 2010, the construction industry has enjoyed a compound annual growth rate of 11 percent.[45] According to government estimates, employment in the construction industry (which is largely unorganized) increased by 70 percent between 2004 and 2009.[46] Builders, for their part, are quite content with the sector's reliance on cash—since the latter is necessary for side payments or "speed money."[47]

The affinity between builders and politicians is further compounded by the ineffectual regulation of election finance.[48] In recent years, the cost of elections has enlarged considerably,

as a result of several, interconnected factors: growing electoral competition, the increasing size of constituencies, inflated voter expectations of handouts, and the growing complexity of elections (brought on by technological changes, such as the advent of social media). Formal limits on campaign expenditures do exist in India, but are widely seen as unrealistic. Political parties are neither able nor willing to regulate election spending internally and are not subject to serious independent scrutiny. Furthermore, political parties in India are organizationally weak and often unable to systematically raise significant funds on their own, limiting their ability to finance individual campaigns from their own coffers.[49] Second, efforts to regulate corporate contributions have not changed the under-the-table pattern of party funding because the potential costs of transparency outweigh any possible benefits.[50] Third, non-electoral mechanisms of accountability could help control the rising costs of elections, yet their unevenness has limited their effectiveness. For instance, India has a long tradition of a free media, yet the Press Council of India has warned that the practice of politicians paying journalists for favorable coverage was widespread.[51]

The realities of the Indian system point to incentives for private financing of elections, which open the door to methods of "off-the-books" transactions. The overall magnitude of illicit election finance is difficult to determine. A 1999 independent election audit in 24 parliamentary constituencies found that the average winner spent Rs. 8.3 million (when the limit ranged from 1-2.5 million).[52] One news report, citing the views of political money managers, estimated that a municipal councilor's election in a major metropolitan city will cost between Rs. 3 and 5 million. The cost of a state election is far greater, ranging between Rs. 10 and 50 million while contesting a parliamentary election will set candidates back between Rs.

100 and 250 million.[53] Recent interdictions by the Election Commission of India (ECI) prior to the 2016 state elections in Tamil Nadu have resulted in the seizure of over 100 crore rupees in illicit cash intended for election purposes.[54] This, of course, only represents what cash shipments authorities were able to intercept.

To quench the thirst for such "off-the-books" financing, politicians often turn to private firms for assistance. It is important to note that firms typically do not provide direct cash transfers to politicians themselves. Rather, it is believed that they directly sponsor some portion of campaign costs; this means that no cash must directly change hands.[55] This is important because, in recent years, the ECI—which has regulatory authority over elections—has stepped up enforcement on direct spending by candidates. Upon their formal nomination, candidates are required to furnish affidavits detailing their personal financial assets; and, upon the end of campaigning, must disclose their election expenditures. While the campaign is ongoing, the ECI uses a range of mechanisms, from hiring videographers to maintaining shadow election expenditure ledgers, to clamp down on off-the-books spending. Due to this increased scrutiny, candidates have incentives to encourage firms to directly cover invoices or incur spending on their own rather than provide direct monetary transfers.

Firms in the construction sector are not the only mechanism for funding elections. In India, there is anecdotal evidence of similar dynamics in other regulated sectors, ranging from liquor to mining.[56] Nevertheless, builders are an important piece of the puzzle. Scholars point out that the sector is ripe for circulating, or laundering, "black money," because the "true" price of land (and, hence, whatever the land is eventually used for) is often not known; India, like many other developing countries, lacks an independent pricing mechanism for land.[57] The

ability to undervalue land makes it an attractive investment for parking cash of questionable origin.[58] One estimate, derived by a real estate consultancy, surmised that as much as 30 percent of all property transactions in India involved black money.[59]

In sum, builders require favors from politicians and politicians, in exchange, expect financial contributions during election season. However, because elections introduce some uncertainty about the precise future of the political landscape, it is not uncommon for politicians to deliver on some of their promises ahead of elections as a mechanism of securing funding. Conversations with current and former bureaucrats reveal two principal methods. The first is for politicians to grant builders sought-after "change in land use" certificates, or CLUs, ahead of elections as a down payment.[60] Builders require CLU certificates if they are to, say, convert designated agricultural land for commercial, industrial, or residential purposes.[61] The second mechanism, common in urban metropolitan areas, is for politicians to use their influence to green light increases in the "floor space index" (FSI), or the ratio of a building's total floor area to the total size of the underlying parcel of land upon which it is built. One analysis of FSI increases in Mumbai revealed that decisions to allot more FSI to builders were more likely to be cleared ahead of elections.[62]

Hypotheses on Cement Consumption

Analyzing activity in India's construction sector presents difficulties for measurement because we lack reliable metrics. To overcome this, we use data on the amount of cement that is consumed in the major states of India on a monthly basis over a 15-year period. Cement consumption represents a suitable barometer of construction activity for two reasons. First,

cement is the indispensable ingredient in virtually all construction; it has no obvious substitute as a binding agent for building materials. Industry research estimates that real estate accounts for roughly three-quarters of India's domestic cement demand, with infrastructure accounting for the remainder.[63] Second, cement consumption closely tracks short-term trends in construction activity. Strictly speaking, our data are on cement purchases but industry insiders report that there is little lag time between purchases and consumption of cement due to high inventory costs, fear of theft, and cement's unique chemical properties.[64] Hence, inventory is largely fixed since consumers do not build up large stocks of cement. Furthermore, large end-users purchase cement from the major cement companies directly rather than middlemen.[65]

Our core hypothesis is that cement consumption should exhibit a significant contraction during the month of the state election. Because builders are a leading source of election finance, one would expect activity in the sector to slow down during the month-long campaign period prior to Election Day. This is because existing liquidity in the sector is likely to dry up as resources otherwise slated for building must be channeled into electoral campaigns. Several commentators have noted this regularity, but only anecdotally and without firm empirical evidence. For instance, one account written ahead of the 2014 general election suggests "many of India's real estate companies are now diverting funds from housing and other projects to election campaign contributions, which is why existing projects are being stalled while new ones are being halted completely."[66]

To probe whether the mechanism underlying the link between cement consumption and elections is related to election finance, as opposed to some other factor, we propose a series of secondary hypotheses. Under India's federal constitution, the state governments—as

opposed to the national government—have regulatory responsibility for land and associated activities such as construction. Hence, there are stronger incentives for builders to cultivate ties with state-level, rather than national-level, politicians.[67] However, individual politicians in India derive their power largely by their proximity to party leaders. Given that all significant political parties at the state level also compete in national elections, there are secondary incentives for builders to assist parties in financing national election campaigns.[68] Therefore, we expect that the contraction in cement consumption will be significant in national elections, though of a smaller magnitude than in state-level elections.

However, elections in some states coincide with national elections; for instance, the last four state elections in Andhra Pradesh have coincided with national elections. In those instances, which we refer to as dual (or concurrent) elections, the need for election finance will be relatively greater. Therefore, we expect the magnitude of the contraction in cement consumption to be larger for dual elections than if only a state or national election is being held.

Fourth, we also expect to see variation according to the socioeconomic realities of the states. For instance, more urbanized states are comparatively richer; are more likely to possess well-developed real estate markets; and have higher demand for construction than their rural counterparts. As a result, linkages between politicians and builders are likely to be more intense in more urbanized states.[69] Thus, we expect that cement consumption should exhibit a larger contraction in urban versus rural states.

Our last hypothesis concerns political competition. There is substantial variation on this dimension in India, both across states as well as over time. The need for election finance is

likely to be greatest for those elections where competition between parties is greatest and uncertainty about the outcome is highest. Therefore, we hypothesize that the contraction in cement consumption should be comparatively larger in more competitive elections.

Data and Methods

To test our hypotheses, we construct a dataset of monthly data on cement purchases by state. The source of the data is the Cement Manufacturers' Association of India (CMA), an industry trade group whose members include the country's largest public and private sector cement manufacturers. One of CMA's primary roles is to serve as a comprehensive clearinghouse for information on the capacity, production, dispatch and export of cement, using data collected on a monthly basis from its member companies.[70] CMA's data are proprietary but were provided to the authors by a member company. Monthly data on cement consumption (measured in metric tons) is available from April 1995 to March 2010, for a total of 180 calendar months per state. Our study emphasizes cement consumption, rather than production, because our hypotheses revolve around contractions in liquidity in the construction sector. We do not make any claims about linkages between electoral politics and the supply of cement (production), although we will address whether the contraction in cement consumption is a response to a corresponding contraction in production.

India is a federal parliamentary democracy comprised of 29 states and 7 union territories. For our analysis on cement consumption, we focus on the 17 major states, which account for over 92 percent of the country's population. We do not include data from three new states created in 2000 or most small microstates and union territories (Delhi is an

exception). As of 2009-2010, cement consumption in the 17 major states accounts for 90 percent of the all-India total. Thus, we are confident that we are working with data that has considerable explanatory power.

Before proceeding, we address two concerns about the reliability of our data. First, one might question whether firms have an incentive to report truthfully to the CMA, especially if data is shared with competitor firms. However, the CMA does not provide firm-specific data; it merely collects, aggregates, and reports data at the state-level. Second, although CMA includes the biggest public and private sector cement manufacturers in India, not all cement firms are member companies. If, for instance, smaller cement manufacturers are underrepresented in the CMA, this could bias our results. To investigate, we compared government data on monthly cement production with the CMA data.[71] The government data includes information from all cement manufacturers between April 1999 and March 2010. The two data sources are highly correlated ($r = .98$), providing additional confidence in our reliance on the CMA data.

To our dataset on cement consumption, we add information on elections from the ECI. Between April 1995 and March 2010, there were a total of 52 state elections across India's 17 major states as well as five national elections. Roughly one-quarter of all state elections in our dataset coincide with national elections. State assembly elections take place every five years on a staggered schedule, although a state assembly can be dissolved before the conclusion of its full term and early elections can be called. Of the 52 state elections in our dataset, nine were unscheduled. Of the five national elections, two were unscheduled. In India's parliamentary system, the official campaign period prior to elections is very brief, lasting only a matter of weeks.

To test for electoral cycles in cement consumption, we adapt the model used by Akhmedov and Zhuravskaya (2004) in their study of opportunistic political business cycles. Specifically, we estimate the following equation using regional monthly panel data:

$$\log y_{it} = \sum_{j\in\{-6;6\}} \alpha_j m_{jit} + \beta_1 \log y_{it-1} + \tau_t + f_{is} + \varepsilon_{it}, \qquad (1)$$

where *i* identifies states, *t* represents the month of the year, and *y* stands for the level of cement consumption (in log terms) in a given state-month (*Log Cement Consumption*). m_{ji} is an indicator variable that equals one, when *t* is *j* months away from the state election. Our model includes time fixed effects, τ_t, where there is an indicator for each month-year. This fixed effects parameter controls for unobserved national-level trends as well as any general macroeconomic shocks. As in Akhmedov and Zhuravskaya (2004), we also need to control for state-specific fixed effects as well as any state-specific seasonal or time shocks. Hence, we include the fixed effects term, f_{is}, for each of the twelve calendar months of the year (*s*) in each state, *i*.

Our primary variable of interest is m_{ji} *when j* = 0, which signifies the month of the state election (*Election*). In the base specification, we also include dummies for each of the six months preceding and following a state election (*Election-1, Election-2,* etc.). A negative coefficient on α_j when *j* = 0 would provide support for our hypothesis that the occurrence of a state election is associated with a drop in cement consumption. Finally, we include a lag of our dependent variable, $\log y_{i\,t-1}$, in the model because we believe there are strong theoretical

reasons for expecting that cement consumption exhibits temporal dependence.[72] We are also concerned about serial correlation in the data, so including a lag makes sense from a modeling perspective.[73] Summary statistics and details about our coding can be found in the Appendix to this chapter.

Empirical Results

We begin with our baseline series of multivariate regressions in which we estimate the effect of state elections on (log) cement consumption. As seen in Column 1 of Table 2, we first estimate our model without any fixed effects parameters, only including indicator variables for the election month and the six months before and after. The regression results indicate that state elections are associated with a significant decline in cement consumption, conditional on cement consumption in previous months. There is a slight increase in cement consumption immediately after the election, but otherwise the coefficient of the election lags and leads are insignificant. This basic specification does not control for time trends, so in Column 2 we add time fixed effects—or indicator variables for every month-year combination. In Column 3, we include only state-month fixed effects to account for state-specific seasonality in construction activity. Finally, in Column 4, we include both time and seasonal fixed effects parameters (as in Equation 1 above). Across all models, our results show that state elections are associated with a consistent, statistically significant 12 percent decline in cement consumption. Our point estimates for the election indicator are invariant to the inclusion of both time and seasonal fixed effects parameters; they are similar across models, both in terms of magnitude and statistical significance.

[Insert Table 2 here]

In the full specification (Column 4), almost every other indicator variable marking the months before and after the election is insignificant (with the exception of the dummies for the six month-lag and five month-lead). The results demonstrate a clear, election-related decline.[74]

National Elections

Next, we explore our hypothesis that the election-related contraction in cement consumption should be smaller for national (*Lok Sabha Election*), as opposed to state elections. Recall, we expect that national elections will have a significant, negative effect on cement consumption due to the fact that construction firms have reason to curry favor with major political parties—all of whom straddle state and national politics. However, we expect that the election effect will be of a smaller magnitude than for state elections given that land use is primarily regulated by the states. To estimate the effect of national elections on cement consumption, we employ a slightly different model. Namely, we can no longer include a full set of month-year fixed effects to account for the time trend because the indicator for *Lok Sabha* (national) elections does not vary across states (e.g. national elections are a common "shock" simultaneously experienced by all states). Thus, for the regressions testing this hypothesis we can only include fixed effects for years as well as for each state-month combination (e.g. seasonal time effects). Column 1 of Table 3 reports the results of the baseline model (with no fixed effects). According to this basic specification, national elections are associated with a 10 percent decline in cement consumption. In Columns 2 and 3, we add year fixed effects and

seasonal effects, respectively. The result holds although the coefficient is smaller once seasonal effects are included. In Column 4, we include both sets of fixed effects and the results here indicate that national elections are associated with a percent decline in the level of cement consumption.[75]

[Insert Table 3 here]

Dual Elections

Our next hypothesis posits that the magnitude of the contraction in cement consumption should be larger for "dual" elections—those instances in which states are concurrently holding state and national elections—than if only a state or national election is being held. As Column 1 of Table 4 attests, the negative effect of *Dual Election* on cement consumption is three times as strong as that of state elections. Dual elections are associated with a 38 percent drop in the level of cement consumption. This result suggests the imperative for election finance is significantly larger when candidates for state and national elections need to raise funds for their respective campaigns simultaneously.

[Insert Table 4 here]

Urban-Rural States

We further hypothesized that the negative effect of elections of cement consumption should be larger in urban than in rural states. Columns 2 and 3 of Table 4 split the sample into

urban and rural states. State elections are associated with a statistically significant decline in cement consumption across both urban and rural states. It appears at first glance that the effect is stronger for urban than rural states (15 percent versus 11 percent, respectively). Yet, regressions using an interaction term (not presented here) find that this difference is not statistically significant.

Political competition

Our fifth and final hypothesis explores the effect of political competition on the relationship between state elections and cement consumption. Specifically, we hypothesize that the contraction in cement consumption will be larger in more competitive elections. Our basic intuition is that more competitive elections are associated with greater uncertainty, increasing the returns to the marginal dollar of election finance raised. To capture the extent of political competition, we take the simple average of the margin of victory across constituencies in a given state (*Margin*). In the regressions, we then create dummy variables for each of three categories of competition. An election is classified as *Low Margin* if the margin of victory is in the 25^{th} percentile or below (i.e. where the margin of victory is 10 percent or below). *Medium Margin* and *High Margin* elections are those between the 25^{th} and 75^{th} percentiles (between 10 and 14 percent margin) and 75^{th} percentile and above (greater than 14 percent margin of victory), respectively.

Our results, from Column 4 of Table 4, indicate that—relative to elections with high margins of victory—more competitive elections (or those where margins are classified as *Low Margin* or *Medium Margin*) are associated with greater declines in cement consumption,

although the differences are not statistically significant. Since the cut-points chosen for classifying competitive elections are somewhat arbitrary, as an additional test we also estimate a model using a dummy variable for whether the margin of victory is below the median margin of victory in our dataset. Here too, the results (available on request) demonstrate that elections where the margin is below the median are associated with greater declines in cement consumption, but once again the differences are not significant.

Alternative Explanations

Thus far, we have demonstrated that there is a robust, negative relationship between cement consumption and elections.[76] We believe this is indicative of the role builders play as financiers of elections. In this penultimate section, we address challenges to our interpretation of the results.

Economic Uncertainty

One alternative explanation is that the decline in cement consumption is not symptomatic of the construction sector's role as a conduit for election finance, but instead the outcome of a decline in economic activity arising out of pre-election political uncertainty. For instance, Canes-Wrone and Park argue that, in advanced democracies, political uncertainty associated with elections induces private sector actors to postpone investments with high costs of reversal.[77] Hence, elections are associated with a decline in economic activity, or a "reverse business cycle."

We do not believe there is theoretical support for such a view in the context of India.

For starters, the argument that general economic activity contracts on account of election-induced uncertainty stands in contrast to much of the literature on political business cycles in developing countries. Indeed, this literature suggests that policymakers in developing democracies induce short-term economic *expansions* (and increase deficits) before elections.[78] Studies of India have reached similar conclusions including work by Khemani , who finds support for an expansion in public works projects, such as road construction, in anticipation of elections.[79]

Furthermore, we can devise empirical tests to help us distinguish between the election finance explanation we favor and the alternative hypothesis regarding economic uncertainty. First, we exploit the fact that India's parliamentary system allows for both "scheduled" and "unscheduled" elections. The latter occur when a government fails a vote of no confidence or calls early elections. According to our election finance logic, we hypothesize that the contraction in cement consumption will be larger for scheduled elections (*Scheduled Election*) compared to unscheduled elections. When elections occur as scheduled, there is a degree of certainty that allows builders and politicians to coordinate activities and they have an ex ante schedule to guide their transactions. When unscheduled elections are held, it is likely to be more difficult for builders to adjust their activities accordingly. In addition, builders might be less certain about the political outlook for the state and the electoral fortunes of various parties.

The logic of economic uncertainty would suggest the exact opposite hypothesis: given the uncertainty attached to unscheduled elections (often sparked by political instability and/or unforeseen events) the pace of economic activity should slow down as firms grapple with a

potential change in government. So if uncertainty were driving the decline in cement consumption, this decline should be greater in unscheduled elections.[80]

To adjudicate between these two explanations, we re-estimate our baseline model, replacing our election dummy variable with a dummy variable for scheduled elections. Our results, for state and national elections, can be found in Table 5 (for ease of comparison, we also show our original results using the standard election dummy). The occurrence of scheduled state elections (Column 2) has a significant negative effect on cement consumption. Cement consumption declines by 15 percent during the month of scheduled elections. In line with our election finance logic, the coefficient on the scheduled state election variable is slightly larger than when we considered all state elections (Column 1). As for scheduled national elections, we find that the negative impact is slightly more pronounced, comparing the result in Column 4 to the baseline regression in Column 3. Column 4 reports an 8 percent decline in cement consumption for scheduled national parliamentary elections. Our results seem to favor an election finance logic over one of economic uncertainty.

[Insert Table 5 here]

Another possible objection, also related to the uncertainty argument, relates to regulations enacted by the ECI. From the time elections are announced to the date results are made public, the ECI enforces a "model code of conduct," or a set of guidelines intended to create a level playing field so that the government does not exploit the benefits of incumbency for electoral purposes. When the code is in force, the government is unable to begin major new

schemes or projects. It is plausible then that the model code contributes to a decline in infrastructure building. We do not believe this to be the case for two reasons. First, the model code only restricts the government from announcing new schemes and projects in advance of the elections.[81] It has no bearing on the government's implementation of existing projects. Second, given the time lag inherent in tenders, contracts, and so on, the code might delay announcements, but it most likely does not impact implementation. After all, according to data collected by the World Bank, it takes an average of 147 days (in Mumbai) for a firm to obtain a construction permit.[82]

As a final test of the economic uncertainty logic, we utilize monthly data on the level of industrial production to examine whether the decline in cement consumption is robust to controlling for the pace of general economic activity. We rely on the monthly index of industrial production (*IIP*), an aggregate statistic that represents the status of production in the industrial sector. Since the IIP is a national-level measure, we cannot use this data to analyze state elections. However, we can use it as a control in our regressions looking at national election cycles. The inclusion of the IIP variable does not alter our estimates of the negative effect of national elections on cement consumption (as seen in the Online Appendix).

Production Shortfalls

A second alternative hypothesis relates to output changes in the cement industry. For instance, it is plausible that cement producers will anticipate a decline in consumption and cut production prior to elections. If production significantly declines before elections, one could contend that our results on consumption are a direct consequence of cutbacks in production.

We do not expect that production will decline prior to elections because cement is a continuous processing industry with increasing returns to scale.[83] This means that producers incur high costs if they choose to reduce their overall rates of capacity utilization. Nevertheless, we re-estimate our empirical model using monthly data on cement *production*, rather than cement *consumption*, as our dependent variable. We find no evidence of an electoral cycle in cement production (Table 6). Across all models, state elections are not associated with a significant change in cement production. If anything, there is some support for a small increase in cement production the month following elections. In any case, it does not appear that the observed decline in cement consumption around elections is a result of a corresponding decline in cement production.

[Insert Table 6 here]

Consumption Smoothing

Another possible objection to our findings relates to consumption smoothing. If prior to elections builders anticipate the need to redirect funds to election campaigns, wouldn't they take action to "smooth" their consumption? After all, private firms are thought to prefer a stable consumption path over time. Thus, if businesses know that their consumption will likely decline in the future, they should anticipate this by gradually redirecting funds over time.

While an impulse to smooth consumption makes sense in theory, we argue that it does not happen in practice for at least two reasons. For instance, one could argue that builders might prefer to provide occasional payments to parties and candidates before elections.

However, as argued above, builders typically do not transfer cash to campaigns; rather they directly cover campaign expenses because neither party want an official record of the transaction. This is particularly true for politicians, who do not want to have suspicious assets show up in their accounts (which they must publicly disclose under Indian law when filing their nomination papers). Thus if builders, anticipating elections, redirected funds to politicians in installments, it would defeat the purpose of keeping these transactions in the "black." Instead, politicians desire funds during election season because these funds can be directly routed into campaign expenditures, without keeping them on their own books—a "cash in, cash out" system.

Second, because builders operate in a cash-intensive environment, there might also be constraints on their liquidity that hamper their ability to smooth consumption. First, as was mentioned earlier, banks are generally cautious about lending to the construction sector. RBI regulations mandate that banks' exposure to real estate lending be no more than 15 percent of a bank's total deposits.[84] Second, banks are unlikely to provide builders with financing to address liquidity constraints in advance of elections when the underlying motivations are expressly political. Third, election-season borrowing is likely to be costly for builders because the cost of borrowing will increase if the general demand for credit is higher as elections approach.

Finally, builders are less concerned with production slowdowns than firms in comparable sectors because many customers in India's property market sign contracts with builders prior to construction (called "bookings") and make substantial advance payments to builders up-front (often with a corruption premium).[85] This is a consequence of the fact that

there is a serious supply-demand imbalance in the marketplace, which tilts the balance of power in favor of builders rather than consumers.[86] Advance payments mean that builders in India are far less concerned than they might otherwise be in other countries about the timely completion of projects.

It is also possible that builders accept that idea that providing election finance—and thus facing a short-term liquidity shortage—is part of the cost of doing business in a highly regulated economy. Builders may be willing to put up with a temporary slowdown in building activity if they are reaping benefits from the state in other ways.

Other Explanations

Before concluding, we briefly address several other possible alternative explanations. One alternative is that construction slows down during elections because laborers employed by builders are being used as temporary labor for campaigns. However, such a hypothesis assumes that only labor from the construction sector is used for elections and not from other sectors (we noted earlier our measure of industrial production does not decline during elections). There is no obvious reason why this might be the case.

A second alternative explanation involves migrant labor. Across India, the construction sector is thought to employ a significant number of migrant workers. If migrant workers return home to vote in elections, this might create a labor supply shortage in their state of residence—hence accounting for a slowdown in construction activity. However, this argument falls short because of India's system of staggered elections. A worker from the state of Bihar (a state with net out-migration) who is working on construction projects in Maharashtra (a state with net in-

migration) might take leave to go home to Bihar to vote in its state elections. This could possibly have an impact on cement consumption in Maharashtra but it should not have any impact on cement consumption in Bihar. However, we find evidence of exactly the opposite effect: in this scenario, it is cement consumption in Bihar that declines.

A final alternative explanation relates to transportation. Construction activity could decline prior to elections if the transport of construction-related materials is constrained. Since trucks are in heavy demand around election time—for campaigning, transporting voters to rallies and to the polls, and ferrying election workers—there could be an election-induced shortage of transport vehicles, which might adversely impact construction activity. However, if this were the case, we would expect to see suggestive evidence of an election-related decline in economic activity. Yet, our regressions using cement production and those controlling for industrial production do not uncover any evidence of an economic slowdown around elections.

Conclusion

The presence of "black" money is a well-known feature of elections in many developing democracies. Yet due to its opacity, much of what we know is based on anecdotal evidence or journalistic investigations. This chapter builds on the insights of a growing literature on regulation and corruption to empirically demonstrate—and quantify—illicit flows of election finance in India.

Due to the nature of state regulations governing land use, we focus on the role of the construction sector in providing off-the-books campaign contributions to politicians—a dynamic which the comparative record demonstrates is not uncommon. In particular, we use variation in

the demand for cement to demonstrate the presence of an electoral cycle in building activity, using data from India. This effect is consistent with the belief that the sector serves as a key conduit of illicit election finance. Using a variety of models, we demonstrate that our key empirical finding is robust and address what we see are the leading objections to our interpretation of the underlying mechanism.

Our findings have broad relevance for the study of money politics in the developing world, where we are most likely to observe illicit election finance. There is a small, but growing literature in this area.[87] This chapter adds to this literature in two ways. First, it focuses on a specific sector—construction—that is widely thought to be linked with "off-the-books" politics. Second, it contributes a novel measure for capturing election cycles in this sector that is consistent with its role as a source of election finance. Our findings are also broadly related to the field of "forensic" economics, which has developed innovative methods of estimating the private returns to political power. Work in this area attempts to estimate the extent to which firms benefit from possessing political connections.[88] A second strand of the literature attempts to identify the benefits politicians obtain on the basis of their political power.[89] In contrast to this larger literature, we place an emphasis on the role of election finance incentives rather than mere rent seeking.[90] Given the centrality of the election cycle to our argument, this chapter is also linked to the literature on political business cycles.[91]

Looking ahead, we believe that this work has several implications for the field of political economy. Scholars need to pay greater attention to the role black money is playing across the developing world. If there are large sums of money moving through the political system independent of official expenditures, our estimates of election finance will be downward-

biased if we do not take them into account. To date, much of the comparative literature focuses on licit flows, but such flows likely constitute but a fraction of total election spending in many developing countries.[92]

Second, scholars should devote greater attention to understanding the drivers of election finance. For instance, greater political competition has often been perceived to be a positive development in democracies, as it provides voters with more choices and therefore better representation. However, more competition might also trigger greater electoral expenditure, as parties look to gain an advantage over their competitors. Similarly, more frequent elections have often been viewed as a means of delivering more accountability: after all, voters have more opportunities to follow Schumpeter's advice and "throw the rascals out," if their expectations are not met. Yet, frequency can also have negative consequences: it can shorten representatives' time horizons and result in greater pressures to raise campaign funds. We need to develop a much better understanding of the determinants of the relative magnitudes of election finance.

Finally, as we argued at the outset of this article, the growing costs of elections—through legitimate or illegitimate channels—have serious implications for public policy as well as the status and functioning of democracy. In situations where public subsidies of elections are limited or nonexistent, politicians are reliant on private sources of funding. Raising money from supporters raises at least the prospect of politicians shaping post-election public policies in ways that are beneficial to private interests.

Figure 1: Hypothesized Builder-Politician Nexus

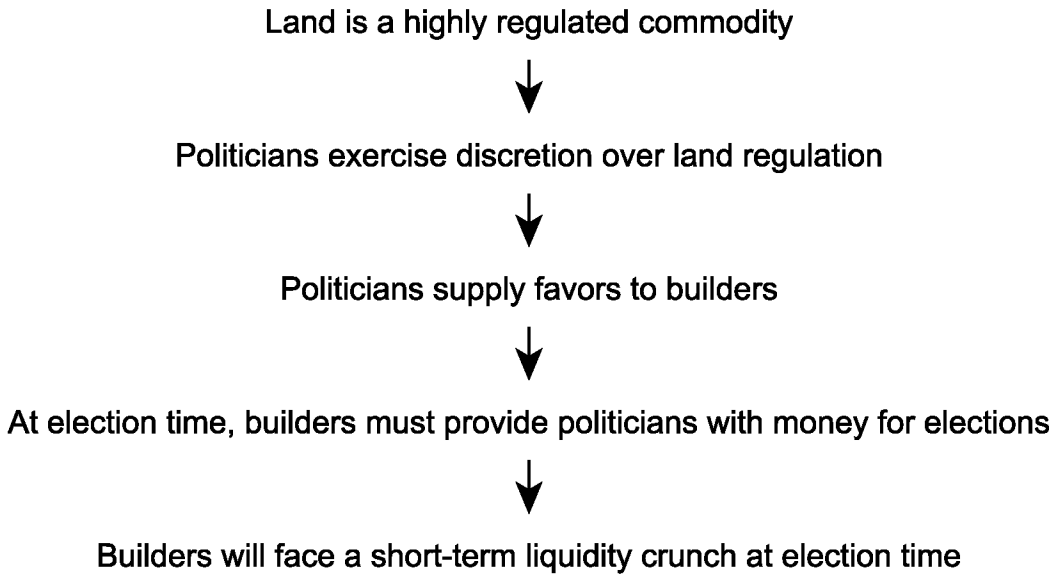

Table 1: Examples of Alleged Land "Scams" in India

State	Time period	Description
Maharashtra	2002-2009	Four ex-chief ministers allegedly used defense land to build a posh apartment complex in downtown Mumbai for family members, political allies, and business cronies. The housing complex, known as the Adarsh Housing Society, was originally intended to house widows of army veterans.
Goa	2006-2007	Town and Country Planning Minister Atansio Monserrate allegedly received over 260 million rupees from an ex-bureaucrat-turned-real estate developer to convert large tracts of agricultural land into settlement or commercial zones. As part of his portfolio, Monseratte oversaw the 2011 Regional Development Plan, which authorized the conversions.
Andhra Pradesh	2006-2009	India's Comptroller and Auditor General (CAG) found that ex-Chief Minister Y.S. Reddy gave away nearly 90,000 acres of land to favored private entities on an ad hoc, discretionary basis, resulting in an estimated loss of one trillion rupees to the state. The benefitting firms are alleged to have invested in YSR's son's businesses.
Karnataka	2006-2010	A report of the state anti-corruption ombudsman found that ex-Chief Minister B.S. Yeddyurappa used his discretion to transfer government property to family members at a throwaway price. The family then sold the land to a mining company for a large profit.

Table 2: Cement Consumption and State Elections

DV:	(1) Log cement consumption	(2) Log cement consumption	(3) Log cement consumption	(4) Log cement consumption
Election$_{t-6}$	0.02	0.02	0.04	0.06***
	[0.78]	[0.73]	[1.54]	[2.69]
Election$_{t-5}$	-0.01	-0.00	-0.02	-0.00
	[-0.42]	[-0.04]	[-0.88]	[-0.03]
Election$_{t-4}$	-0.00	-0.01	-0.02	-0.02
	[-0.12]	[-0.38]	[-0.84]	[-0.69]
Election$_{t-3}$	-0.03	-0.03	-0.03	-0.03
	[-1.08]	[-1.19]	[-1.21]	[-1.55]
Election$_{t-2}$	0.04	0.03	0.02	0.01
	[1.27]	[1.24]	[0.83]	[0.55]
Election$_{t-1}$	0.04	0.02	-0.01	0.00
	[1.38]	[0.85]	[-0.31]	[0.21]
Election	-0.12***	-0.12***	-0.12***	-0.12***
	[-4.12]	[-4.71]	[-4.87]	[-5.44]
Election$_{t+1}$	0.09***	0.05**	0.03	0.03
	[2.95]	[1.97]	[1.33]	[1.29]
Election$_{t+2}$	0.02	0.04	0.03	0.03
	[0.82]	[1.50]	[1.19]	[1.17]
Election$_{t+3}$	0.03	0.04	0.07***	0.04
	[0.89]	[1.40]	[3.06]	[1.56]
Election$_{t+4}$	-0.01	-0.01	0.03	0.01
	[-0.28]	[-0.57]	[1.16]	[0.63]
Election$_{t+5}$	-0.04	-0.01	0.02	0.04*
	[-1.46]	[-0.25]	[0.98]	[1.82]
Election$_{t+6}$	-0.03	-0.04*	-0.01	0.00
	[-1.05]	[-1.65]	[-0.51]	[0.20]
Fixed effects	-	Time	State-Month	Time & State-Month
Observations	2,856	2,856	2,856	2,856
R-squared	0.95	0.96	0.97	0.97
Number of states	17	17	17	17

Note: Z statistics in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%. All models include three lags of the dependent variable. Model (2) includes time fixed effects; Model (3) includes fixed effects for each state-month combination; and Model (4) includes time and state-month fixed effects. Models are estimated using OLS with panel-corrected standard errors. Dependent variable is natural log of cement consumption.

Table 3: Cement Consumption and National Elections

DV:	(1) Log cement consumption	(2) Log cement consumption	(3) Log cement consumption	(4) Log cement consumption
Lok Sabha Election$_{t-6}$	0.03	0.04	-0.03	-0.01
	[0.67]	[0.91]	[-1.12]	[-0.34]
Lok Sabha Election$_{t-5}$	0.02	0.03	0.00	0.01
	[0.39]	[0.65]	[0.11]	[0.60]
Lok Sabha Election$_{t-4}$	0.07*	0.09**	0.04	0.05**
	[1.93]	[2.06]	[1.45]	[2.01]
Lok Sabha Election$_{t-3}$	0.05	0.05	0.02	0.02
	[1.26]	[1.14]	[0.59]	[0.88]
Lok Sabha Election$_{t-2}$	-0.02	-0.02	0.00	0.01
	[-0.46]	[-0.40]	[0.06]	[0.48]
Lok Sabha Election$_{t-1}$	0.04	0.03	-0.05**	-0.04
	[0.96]	[0.77]	[-2.04]	[-1.50]
Lok Sabha Election	-0.10***	-0.10**	-0.06**	-0.05**
	[-2.58]	[-2.37]	[-2.26]	[-2.01]
Lok Sabha Election$_{t+1}$	0.03	0.03	-0.04	-0.04
	[0.81]	[0.63]	[-1.51]	[-1.48]
Lok Sabha Election$_{t+2}$	0.00	-0.00	0.01	0.01
	[0.03]	[-0.06]	[0.51]	[0.26]
Lok Sabha Election$_{t+3}$	0.02	0.02	0.07***	0.06**
	[0.64]	[0.48]	[2.76]	[2.56]
Lok Sabha Election$_{t+4}$	-0.04	-0.05	0.02	0.03
	[-1.14]	[-1.07]	[0.93]	[1.40]
Lok Sabha Election$_{t+5}$	-0.05	-0.05	-0.02	-0.01
	[-1.35]	[-1.26]	[-0.83]	[-0.23]
Lok Sabha Election$_{t+6}$	0.02	0.02	-0.03	-0.00
	[0.56]	[0.52]	[-1.02]	[-0.11]
Fixed effects	-	Year	State-Month	Year & State-Month
Observations	2,856	2,856	2,856	2,856
R-squared	0.95	0.95	0.97	0.97
Number of states	17	17	17	17

Note: Z statistics in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%. All models include three lags of the dependent variable. Model (2) includes year fixed effects; Model (3) includes fixed effects for each state-month combination; and Model (4) includes year and state-month fixed effects. Models are estimated using OLS with panel-corrected standard errors. Dependent variable is natural log of cement consumption.

Table 4: Cement Consumption, Additional Hypotheses

	(1)	-2	-3	-4
DV:	Log cement consumption	Log cement consumption	Log cement consumption	Log cement consumption
Sample:	*All*	*Urban*	*Rural*	*All*
$Election_{t-6}$	0.05**	0.09***	0.06	0.06***
	[2.06]	[3.12]	[1.53]	[2.79]
$Election_{t-5}$	-0.01	-0.00	0.01	0.00
	[-0.45]	[-0.00]	[0.39]	[0.22]
$Election_{t-4}$	-0.01	0.03	-0.06*	-0.01
	[-0.46]	[0.85]	[-1.69]	[-0.51]
$Election_{t-3}$	-0.02	-0.04	-0.03	-0.03
	[-1.00]	[-1.44]	[-0.86]	[-1.35]
$Election_{t-2}$	0.02	0.00	0.04	0.02
	[0.96]	[0.04]	[1.03]	[0.75]
$Election_{t-1}$	-0.01	0.00	-0.00	0.01
	[-0.26]	[0.12]	[-0.09]	[0.62]
Election	-0.02	-0.15***	-0.11***	
	[-1.05]	[-4.95]	[-3.04]	
Dual Election	-0.38***			
	[-5.86]			
Lok Sabha Election	0.00			
	[0.10]			
$Election_{t+1}$	0.02	0.06*	-0.01	0.04*
	[1.06]	[1.91]	[-0.17]	[1.66]
$Election_{t+2}$	0.01	0.05*	-0.00	0.03
	[0.56]	[1.77]	[-0.10]	[1.33]
$Election_{t+3}$	0.06***	0.07**	0.02	0.04*
	[2.61]	[2.21]	[0.50]	[1.67]
$Election_{t+4}$	0.03	0.01	0.03	0.02
	[1.29]	[0.34]	[0.74]	[0.82]
$Election_{t+5}$	0.03	0.06*	0.01	0.05**
	[1.17]	[1.78]	[0.38]	[2.11]
$Election_{t+6}$	-0.00	0.02	-0.01	0.01
	[-0.17]	[0.66]	[-0.20]	[0.37]
Low Margin				-0.02
				[-1.29]
Med Margin				-0.01
				[-1.53]
Fixed effects	Year & State-	Time & State-	Time & State-	Time & State-

	Month	Month	Month	Month
Observations	2,856	1,512	1,344	2,856
R-squared	0.97	0.95	0.98	0.97
Number of states	17	9	8	17

Note: Z statistics in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%. All models include three lags of the dependent variable, time fixed effects, and fixed effects for each state-month combination. Model (1) uses year, rather than time, fixed effects. In Model (4), *High Margin* is the reference category. Models are estimated using OLS with panel-corrected standard errors. Dependent variable is natural log of cement consumption.

Table 5: Cement Consumption and Scheduled Elections

	(1)	(2)	(3)	(4)
DV:	Log cement consumption	Log cement consumption	Log cement consumption	Log cement consumption
Election type:	*State*	*State*	*National*	*National*
$Election_{t-6}$	0.06***	0.06***	-0.01	-0.01
	[2.69]	[2.76]	[-0.34]	[-0.30]
$Election_{t-5}$	-0.00	-0.00	0.01	0.01
	[-0.03]	[-0.04]	[0.60]	[0.62]
$Election_{t-4}$	-0.02	-0.01	0.05**	0.05**
	[-0.69]	[-0.67]	[2.01]	[2.07]
$Election_{t-3}$	-0.03	-0.03	0.02	0.02
	[-1.55]	[-1.55]	[0.88]	[0.82]
$Election_{t-2}$	0.01	0.01	0.01	0.01
	[0.55]	[0.54]	[0.48]	[0.54]
$Election_{t-1}$	0.00	0.00	-0.04	-0.04
	[0.21]	[0.19]	[-1.50]	[-1.55]
Election	-0.12***		-0.05**	
	[-5.44]		[-2.01]	
Scheduled Election		-0.15***		-0.08**
		[-5.58]		[-2.56]
$Election_{t+1}$	0.03	0.03	-0.04	-0.04
	[1.29]	[1.27]	[-1.48]	[-1.52]
$Election_{t+2}$	0.03	0.03	0.01	0.00
	[1.17]	[1.20]	[0.26]	[0.16]
$Election_{t+3}$	0.04	0.04	0.06**	0.06***
	[1.56]	[1.56]	[2.56]	[2.58]
$Election_{t+4}$	0.01	0.01	0.03	0.03
	[0.63]	[0.63]	[1.40]	[1.34]
$Election_{t+5}$	0.04*	0.04*	-0.01	-0.00
	[1.82]	[1.87]	[-0.23]	[-0.15]
$Election_{t+6}$	0.00	0.00	-0.00	-0.00
	[0.20]	[0.20]	[-0.11]	[-0.14]
Fixed effects	Time & State-Month	Time & State-Month	Year & State-Month	Year & State-Month
Observations	2,856	2,856	2,856	2,856
R-squared	0.97	0.97	0.97	0.97
Number of states	17	17	17	17

Note: Z statistics in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%. All models include three lags of the dependent variable. Models (1) and (2) include time fixed effects and fixed effects for each state-month combination. Models (3) and (4) include year fixed effects and fixed effects for each state-month combination. Models are estimated using OLS with panel-corrected standard errors. Dependent variable is natural log of cement consumption.

Table 6: Cement Production and State Elections

DV:	(1) Log cement production	(2) Log cement production	(3) Log cement production	(4) Log cement production
Election$_{t-6}$	-0.01	-0.02	-0.02	-0.02
	[-0.15]	[-0.43]	[-0.50]	[-0.58]
Election$_{t-5}$	-0.02	-0.03	-0.02	-0.03
	[-0.33]	[-0.54]	[-0.43]	[-0.79]
Election$_{t-4}$	-0.01	-0.02	-0.05	-0.04
	[-0.16]	[-0.31]	[-1.30]	[-1.00]
Election$_{t-3}$	-0.03	-0.00	-0.05	-0.05
	[-0.36]	[-0.03]	[-1.16]	[-1.25]
Election$_{t-2}$	0.09	0.07	0.06	0.04
	[1.27]	[1.05]	[1.48]	[0.96]
Election$_{t-1}$	0.01	-0.04	-0.03	-0.05
	[0.10]	[-0.62]	[-0.76]	[-1.10]
Election	-0.03	0.03	0.01	0.03
	[-0.38]	[0.48]	[0.20]	[0.74]
Election$_{t+1}$	0.21***	0.20***	0.05	0.07*
	[2.86]	[2.69]	[1.26]	[1.67]
Election$_{t+2}$	-0.04	-0.05	-0.02	-0.03
	[-0.98]	[-0.96]	[-0.40]	[-0.78]
Election$_{t+3}$	-0.03	-0.05	0.01	-0.02
	[-0.66]	[-1.02]	[0.21]	[-0.57]
Election$_{t+4}$	0.00	0.01	0.02	0.01
	[0.08]	[0.15]	[0.59]	[0.20]
Election$_{t+5}$	-0.03	-0.01	0.01	0.00
	[-0.69]	[-0.10]	[0.16]	[0.07]
Election$_{t+6}$	0.01	0.01	0.00	0.00
	[0.13]	[0.12]	[0.03]	[0.10]
Fixed effects	-	Time	State-Month	Time & State-Month
Observations	2,579	2,579	2,579	2,579
R-squared	0.96	0.96	0.99	0.99
Number of states	17	17	17	17

Note: Z statistics in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%. All models include two lags of the dependent variable. Model (2) includes time fixed effects; Model (3) includes fixed effects for each state-month combination; and Model (4) includes time and state-month fixed effects. Models are estimated using OLS with panel-corrected standard errors. Dependent variable is natural log of cement production.

Appendix

This appendix contains two items. The first is a table with summary statistics of the variables used in the quantitative analysis presented here. The second is a list of variables used, along with details of our coding strategy.

For those interested in more information regarding our statistical analysis, please refer to the Online Appendix, which can be found at http://milanvaishnav.com and https://casi.sas.upenn.edu/about/people/devesh.

Summary Statistics

Variable	Obs	Mean	Std. Dev	Min	Max
Election	3060	0.02	0.13	0	1
Scheduled Election	3060	0.01	0.12	0	1
Lok Sabha Election	3060	0.03	0.16	0	1
Scheduled Lok Sabha Election	3060	0.02	0.13	0	1
Dual Election	3060	0.00	0.06	0	1
Log Cement Consumption	3060	5.97	0.87	2.59	7.76
Log Cement Production	2802	5.38	1.76	1	8.07
Urban	3060	0.53	0.50	0	1
Margin	3060	0.03	0.05	0	0.26
Low Margin	3060	0.05	0.21	0	1
Med Margin	3060	0.12	0.32	0	1
High Margin	3060	0.05	0.22	0	1
IIP	2958	189.73	51.62	116.45	302.77

Coding Details

Election: Indicator variable that equals one during the month state elections are held. We use the following protocol for coding the month of elections. We use the date voters cast their ballots as the "date of the election." In those cases where elections occur in multiple phases (a common occurrence in larger states), we use the date on which voters in the first phase cast their ballots. If the election date occurs before the 15th of the month, we code the prior month as the election month. If the election date occurs after the 15th of the month, we code that month as the election month. Source: Election Commission of India.

Scheduled Election: Indicator variable that equals one during the month state elections are held according to schedule. Source: Election Commission of India.

Lok Sabha Election: Indicator variable that equals one during the month parliamentary elections are held. Source: Election Commission of India.

Scheduled Lok Sabha Election: Indicator variable that equals one during the month parliamentary elections are held according to schedule. Source: Election Commission of India. Source: Election Commission of India.

Dual Election: Indicator variable that equals one during the month state and parliamentary elections are held concurrently. Source: Election Commission of India.

Log Cement Consumption: Natural log of cement purchases (measured in metric tons) recorded by CMA in a given state-month. Source: Cement Manufacturers' Association of India.

Log Cement Production: Natural log of cement produced (measured in metric tons) recorded by CMA in a given state-month. Source: Cement Manufacturers' Association of India.

Urban: Indicator variable that equals one if state is classified as urban. To classify states, we use population figures provided in the 1991 and 2001 census. We use the urban/rural population figures from the 1991 census to create an indicator for urban/rural states for the years 1995-2000. Using the 2001 census, we do the same for the years 2001-2010. We code states as urban if their urban population is above the all-India median, and rural otherwise. Source: Census of India.

Margin: Simple average of the margin of victory across constituencies in a given state. Source: Election Commission of India.

High Margin: Indicator variable that equals one if the average margin of victory across constituencies in a given state is below the 25^{th} percentile of elections in the dataset. Source: Election Commission of India.

Medium Margin: Indicator variable that equals one if average margin of victory across constituencies in a given state is between the 25th and 75th percentiles of elections in the dataset. Source: Election Commission of India.

Low Margin: Indicator variable that equals one if average margin of victory across constituencies in a given state is greater than, or equal to, the 75th percentile of elections in the dataset. Source: Election Commission of India.

IIP: Index of industrial production, an aggregate statistic that represents the status of production in the industrial sector for a given period of time compared to a previous reference period. Source: Ministry of Programme Statistics and Implementation, Government of India.

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[1] Michael Pinto-Duschinsky, "Financing Politics: A Global View," *Journal of Democracy* 13, no. 4 (October 2002): 69-86.

[2] Simeon Djankov et al., "The Regulation of Entry," *Quarterly Journal of Economics* 117, no. 1 (February 2002): 1-37.

[3] Pratap Bhanu Mehta, "Debating Election Finance," *Hindu*, July 17, 2002; Prem Shankar Jha, "Overcome by a Sense of Betrayal," *Hindu*, January 17, 2013.

[4] Raghuram Rajan, "What Happened to India?" Project Syndicate, June 8, 2012. The major sources of political corruption in India are widely thought to emanate from the sectors that are most heavily regulated, such as: natural resources, land, spectrum allocation and defense.

[5] "Survey on Bribery and Corruption: Impact on Economy and Business Environment," *KPMG*, December 2011, accessed May 16, 2012, https://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/Documents/bribery-corruption.pdf; Kerry Francis, Walt Brown, and Hema Hattangady, "India and the Foreign Corrupt Practices Act" *Deloitte Forensic Center*, 2009. 32 percent of firms surveyed by KPMG perceive construction and real estate to be the most corrupt sector—nearly double the figure for telecommunications, the next most corrupt. A report by consulting firm Deloitte states:

"Corruption in India appears to be more widespread in the construction industry, especially in large infrastructure projects."

[6] Saritha Rai, "His Humility My Work for the Richest Candidate," *Indian Express*, May 3, 2013.

[7] This basic intuition was confirmed in an interview one of the authors conducted with a senior executive of one of India's largest cement manufacturers, Mumbai, July 2011.

[8] Simeon Djankov, "The Regulation of Entry: A Survey," *World Bank Research Observer* 24, no. 2 (May 2009): 183-203.

[9] Djankov et al., "The Regulation of Entry." ; Jakob Svensson, "Eight Questions about Corruption," *Journal of Economic Perspectives* 19, no. 3 (Summer 2005): 19-42.

[10] Djankov et al.,, "The Regulation of Entry." ; Djankov, "The Regulation of Entry: A Survey"; Gordon Tullock, "The Welfare Cost of Tariffs, Monopoly, and Theft," *Economic Inquiry* 5, no. 3 (June 1967): 224-232.

[11] Djankov et al., "The Regulation of Entry."

[12] Andrei Shleifer and Robert Vishny, "Corruption," *Quarterly Journal of Economics* 108, no. 3 (1993): 599-617.

[13]George J. Stigler, "The Theory of Economic Regulation," *Bell Journal of Economics and Management Science* 2, no. 1 (Spring 1971): 3-21. This is especially likely when the distinction between "business" and "politician" is blurred. As we elaborate below, self-dealing is often prevalent in intensely regulated sectors because politicians, their family members, and associates have an incentive to do business in these areas in order to exploit information asymmetries and privileged access.

[14] Sandip Sukhtankar, "Sweetening the Deal? Political Connections and Sugar Mills in India," *American Economic Journal: Applied Economics* 4, no. 3 (July 2012): 43-63; Sandip Sukhtankar, "The Impact of Corruption on Consumer Markets: Evidence from the Allocation of Second-Generation Wireless Spectrum in India," *Journal of Law and Economics* 58, no. 1 (February 2015): 75-109.

[15] Yan Leung Cheung, P. Raghavendra Rau, and Aris Stouraitis, "How Much Do Firms Pay as Bribes and What Benefits Do They Get? Evidence from Corruption Cases Worldwide," National Bureau of Economic Research, Working Paper 17981, April 2012.

[16] Judith Chubb, *Patronage, Power and Poverty in Southern Italy: A Tale of Two Cities* (New York: Cambridge University Press, 1982).

[17] John Sidel, *Capital, Coercion and Crime: Bossism in the Philippines* (Stanford: Stanford University Press, 1999); Elena Costas-Pérez, Albert Solé-Ollé, and Pilar Sorribas-Navarro, "Corruption Scandals, Voter Information, and Accountability," *European Journal of Political Economy* 28, no. 4 (December 2012): 469-484; Steven Erie, *Rainbow's End: Irish-Americans and the Dilemmas of Urban Machine Politics, 1840-1985* (Berkeley: University of California Press, 1990).

[18] Sanjoy Chakravorty, *The Price of Land: Acquisition, Conflict, Consequence* (New Delhi: Oxford University Press, 2013).

[19]"Donation to Political Parties Worries Builders," *IndianRealtyNews.com*, March 14, 2009, accessed July 1, 2013, http://www.indianrealtynews.com/real-estate-india/mumbai/donation-to-political-parties-worries-builders.html. A former Congress Member of the Legislative Assembly

(MLA) is quoted as remarking: "For builders, raising funds for candidates during elections is not a favour, but a transaction which can be encashed at a later date."

[20] Ballabh Prasad Acharya, "The Indian Urban Land Ceiling Act: A Critique of the 1976 Legislation," *Habitat International* 11, no. 3 (1987): 39-51.

[21] World Bank, *Urbanization beyond Municipal Boundaries: Nurturing Metropolitan Economies and Connecting Peri-Urban Areas in India*, (Washington, D.C.: World Bank, 2013). The precise extent of the Government of India's land assets is unknown, and it is likely even the government itself does not know for sure. But, as one scholar argues, its holdings—especially those of the defense ministry, railways, military, and public sector undertakings—are undoubtedly immense. See Bibek Debroy, "All the Sarkar's Land," *Indian Express*, November 13, 2015.

[22] Sudha Pai, "Our Land of Discontents," *Indian Express*, May 20, 2011.

[23] Lakshmi Srinivas, "Land and Politics in India: Working of Urban Land Ceiling Act, 1976," *Economic and Political Weekly* 26, no. 43 (October 26): 2482-2484. It is important to distinguish between sectors of the economy that are under the purview of the federal government and those that are state subjects. The liberalizing reforms that took place in India during the early 1990s focused on the former. The central government cannot mandate reform of sectors constitutionally under the states' purview. The source of this information is the authors' interview with a former general manager of one of India's largest urban transport projects, Washington, D.C., August 2012.

[24] Pratap Bhanu Mehta, "It's Land, Stupid," *Indian Express*, August 19, 2010.

[25] World Bank, *Doing Business in 2016* (Washington, D.C.: World Bank, 2016)

[26] Jones Lang LaSalle, *Real Estate Transparency Index 2014*, accessed May 18, 2016, http://www.jll.com/greti/Pages/Rankings.aspx.

[27] To further elaborate the nature of the builder-politician nexus, Figure 1 in the Online Appendix summarizes the sequences of events using an example from the state of Andhra Pradesh.

[28] The Online Appendix is available at: http://milanvaishnav.com and https://casi.sas.upenn.edu/about/people/devesh.

[29] A builder in discussion with the authors, New Delhi, December 2012. A builder constructing a hotel in Mumbai told one of the authors that the government informed him it would only issue building permits if there were a quid pro quo. The quid pro quo sought was not cash but a five percent equity stake in the hotel in the name of a firm connected to a local politician

[30] Rikhil Bhavnani,"Using Asset Disclosures to Study Politicians' Rents: An Application to India," Working Paper, Department of Political Science, University of Wisconsin-Madison, January 2012. It is also common for politicians to accumulate large tracts of land. An econometric analysis by Bhavnani of the changing composition of Indian politicians' assets revealed that extreme wealth increases between elections are driven by the growth of "immovable" assets, which include land and buildings. According to the author, election winners "with extreme asset increases also divest themselves of agricultural land and increase their holdings of nonagricultural land." The process of land conversion is tightly controlled by politicians and bureaucrats and can result in large financial gains.

[31] Nivedita Mookerji, "Reality a Safe Bet for Politicians to Park Black Money," *Business Standard*, February 1, 2013.

[32] The source for this statement is a senior executive of major infrastructure finance company in conversation with the authors, Mumbai, October 2012. As Rai, "His Humility My Work for the Richest Candidate," artfully puts it, "real estate is the asset class increasingly favoured by politicians as it sucks in as well as generates bagfuls of cash or 'black money.'"

[33] Ashish Khetan, "Land Grab. And How to Make Millions," *Tehelka*, May 28, 2012. One investigation into the builder-politician nexus in Mumbai, suggests "almost every MLA and MP [Member of Parliament], both past and present, cutting across party lines, owns at least one real estate project, either directly or through family members or a proxy".

[34] Ranjit Bhushan, "Builders and Friends," *Outlook*, February 19, 2001.

[35] Khetan, "Land Grab. And How to Make Millions."

[36] Sudipto Mondal, "A Symbiotic Relationship," *Hindu*, April 30, 2013; Sreenivasan Jain, "The Republic of Builders," *Business Standard*, April 30, 2013. For instance, the 2013 elections in the state of Karnataka saw at least a dozen major builder-turned-politicians contest from constituencies in or near the urban metropolis of Bangalore.

[37] Mehta, "It's land, stupid," makes the point on connected builders in starker terms: "Several astonishing companies have arisen, on seemingly nothing but their ability to manipulate the political process."

[38] Planning Commission, Government of India, *Working Group Report on Construction for the Twelfth Five Year Plan (2012-2017)* (New Delhi: Government of India, 2011a); Ministry of

Finance, Government of India, *Economic Survey of India, 2012-2013* (New Delhi: Government of India, 2013). Construction accounts for only three percent of the total credit disbursed to the industrial sector in 2010-2011. This compares to 63 percent for manufacturing.

[39] Planning Commission, *Working Group Report on Construction for the Twelfth Five Year Plan (2012-2017).*

[40] Former Urban Development Secretary, Government of Karnataka in conversation with the authors, New Delhi, July 2012.

[41] Ministry of Finance, *Economic Survey of India, 2012-2013*.

[42] According to Planning Commission, *Working Group Report on Construction for the Twelfth Five Year Plan (2012-2017)*, "The construction sector is characterised by lots of project delays which are due to lack of adequate credit, harassment, problems in approvals, bad image of the contractors/builders, etc."

[43] Joyita Ghose, "The Real Estate (Regulation and Development) Bill, 2013," PRS Legislative Brief, June 10, 2014. *Economist*, 2012 states that the non-bank finance builders often rely on "is not always kosher. One fraud expert reckons 80% of money-laundering in India uses property." In 2016, Parliament passed The Real Estate (Regulation and Development) Bill, 2013, which will establish state-level regulatory authorities called Real Estate Regulatory Authorities (RERAs). It remains to be seen how effective or truly independent these new regulatory institutions will be. More detail on the bill can be found in Ghose.

[44] Planning Commission of India, Government of India, Faster, *Sustainable, and More Inclusive Growth: An Approach to the Twelfth Five Year Plan* (New Delhi: Government of India, 2011b).

According to the Planning Commission, 2011a, 95.5 percent of contractors (or 29,600 companies) involved in construction have fewer than 200 employees.

[45] Planning Commission, Sustainable, and More Inclusive Growth: An Approach to the Twelfth Five Year Plan.

[46] Ministry of Finance, *Economic Survey of India, 2012-2013*.

[47] Bhupesh Bhandari, "An Industry Built on Black Money," *Business Standard*, December 4, 2014.

[48] M.V. Rajeev Gowda and E. Sridharan, "Reforming India's Party Financing and Election Expenditure Laws," *Election Law Journal* 11, no. 2 (June 2012): 226-240; E. Sridharan and Milan Vaishnav, "India," in eds. Pippa Norris and Andrea Abel van Es,, *Checkbook Elections: Political Finance in Comparative Perspective* (New York: Oxford University Press, 2016).

[49] Milan Vaishnav, *When Crime Pays: Money and Muscle in Indian Politics* (New Haven: Yale University Press, 2017). While all political parties collect membership dues, they are marginal to the cost of fighting elections

[50] E. Sridharan and Milan Vaishnav, "India." From the perspective of politicians in India, there is great trepidation about being seen as openly taking money from private firms. In a country with a very high poverty rate, there is still widespread skepticism about profit-making by big business. See Rob Jenkins, *Democratic Politics and Economic Reform in India* (New York: Cambridge University Press, 2000).

[51] Press Council of India, "Report on Paid News," July 7, 2010, accessed March 15, 2014, http://presscouncil.nic.in/oldwebsite/councilreport.pdf.

[52] E. Sridharan, "Electoral Finance Reform: The Relevance of International Experience," in *Reinventing Public Service Delivery in India*, ed. Vikram Chand (New Delhi: Sage, 2006).

[53] Bhavdeep Kang, "Inside Story: How Political Parties Raise Money," *Yahoo! News*, September 25, 2013, accessed May 17, 2016, https://in.news.yahoo.com/inside-story--how-political-parties-raise-money-091455119.html.

[54] "Unaccounted Cash Seized In Tamil Nadu Crosses Rs 100 Crore Mark," Press Trust of India, May 15, 2016.

[55] General counsel of a large infrastructure development company in conversation with the authors, Mumbai, July 2012.

[56] M. Rajshekhar, "How Corruption in Coal is Closely Linked to Political Funding," *Economic Times*, August 7, 2012; Mehboob Jeelani, "Under the Influence," *Caravan*, November 1, 2013; Vaishnav, 2017.

Political parties possess a diversity of mechanisms for funding elections disposal, including the recruitment of wealthy individuals involved in criminal activity.

[57] World Bank, *Urbanization beyond Municipal Boundaries: Nurturing Metropolitan Economies and Connecting Peri-Urban Areas in India.*

[58] Arun Kumar, *Black Economy in India* (New Delhi: Penguin, 2002); Rai, "His Humility My Work for the Richest Candidate". One journalist writing about the 2013 elections in the state of Karnataka observed: "2013 is seen to be the election powered by real estate money…Politics and real estate make for a cozy nexus—one a source of unaccounted cash and the other a conduit for expending this cash in order to win the election and then to multiply wealth."

[59] The estimate was attributed to the real estate consultancy, Liases Foras, and quoted in Bhandari, "An Industry Built on Black Money" .

[60] Nagesh Prabhu, "EC Spikes State's Plea Seeking Nod for Change of Land Use," *Hindu*, March 30, 2013. The ECI has, in a few instances, started cracking down on the pre-election issuance of CLUs when the model code of conduct is in force. For example, the body refused to give the Government of Karnataka permission to issue several CLUs ahead of that state's 2013 state assembly election.

[61] Kang, "Inside Story: How Political Parties Raise Money,-" says, "The maximum CLU files are cleared before elections. The conversion of low cost agricultural land to high cost commercial land is well worth a substantial outlay in bribe money."

[62] Shalini Nair, "A Mumbai Pattern: Laxity for Real Estate before Election," *Indian Express*, September 22, 2014.

[63] "Cement," *India Brand Equity Foundation*, August 2015, accessed May 18, 2016, http://www.ibef.org/download/Cement-August-2015.pdf. Land used for real estate is regulated by the government but the investments for building on that land are usually made by private interests. Infrastructure, such as dams and roads, consists of projects that are largely publicly financed on land that is publicly acquired and often executed through government contracts.

[64] An executive of a major cement manufacturer and CMA member firm in correspondence with the authors, January 2012. On its website, CMA also notes: "Cement purchased in bulk and stored for long on-going construction needs proper care in preservation. Cement tends to readily absorb moisture from the surroundings…and react with it chemically. Its binding

property and strength depend upon its capacity for this chemical reaction, which is irreversible."

[65] An executive of a major cement manufacturer and CMA member firm in correspondence with the authors, January 2012.

[66] Sunainaa Chadha, "Delhi, Mumbai Realty Downswing Shows Nexus between Builders and Poll Funding," *Firstpost*, April 12, 2014, accessed May 16, 2016, http://www.firstpost.com/business/economy/delhi-mumbai-realty-downswing-shows-nexus-between-builders-and-poll-funding-1967243.html.

[67] The opposite would be true, for instance, for the allocation of telecommunications spectrum or defense contracts, which are activities governed by the central government.

[68] Yogendra Yadav and Suhas Palshikar, "Principal State Level Contests and Derivative National Choices: Electoral Trends in 2004-09," *Economic and Political Weekly* 44, no. 6 (February 7-13, 2009): 55-62.

[69] Chadha, "Delhi, Mumbai Realty Downswing Shows Nexus between Builders and Poll Funding." Indeed, one report on real estate trends states that the "mutual dependence between builders and politicians is most acute in areas where land is in high demand, such as [the] fast-growing regions new New Delhi."

[70] As a condition of their CMA membership, member firms are required to report data on their operations on a monthly basis.

[71] We are only able to compare government and industry data on cement production because India's Ministry of Commerce and Industry does not collect data on cement consumption, as far as we are aware.

[72]Kyung So Im, M. Hashem Pesaran, and Yongcheol Shin, "Testing for Unit Roots in Heterogeneous Panels," *Journal of Econometrics* 115, no. 1 (July 2003): 53-74; Nathaniel Beck and Jonathan N. Katz, "What to Do (and Not to Do) With Time-Series Cross-Section Data," *American Political Science Review* 89, no. 3 (September 1995): 634–47. Using the Akaike information criterion (AIC), we tested for optimal lag selection. In half of the diagnostic tests (run separately for each state), the results suggested we should include three lags of the dependent variable, while half of the tests indicated we should include four lags. The regressions below include three lags, but the results do not change if we include four lags. As an additional robustness test, we also run all our models without any lags of the dependent variable. The results do not change. In addition, we tested for unit roots using the test developed by Im, Pesaran and Shin. Based on the mean of the individual Dickey-Fuller t-statistics of each unit in the panel, the Im-Pesaran-Shin test assumes that all series are non-stationary under the null hypothesis. Based on the test statistics, we can reject the null hypothesis of non-stationarity. We estimate all models using Ordinary Least Squares (OLS), using the correction for panel-corrected standard errors (PCSE) suggested by Beck and Katz to deal with non-spherical errors (heteroskedasticity and contemporaneous correlation). All of these results are available in the Online Appendix.

[73] We tested for serial correlation using Wooldridge's test for linear panel data. The results indicate that we cannot reject the null hypothesis of no serial correlation in the data.

[74] Figure 3 in the Online Appendix plots the coefficients, starkly demonstrating the decline in cement consumption during the month of elections. To ensure that our core result is not an artifact of the number of leading and lagging months that we decide to control for, we re-estimate the model including both sets of fixed effects, iteratively adding more dummies for the election lags and leads. The results (reported in the Online Appendix), indicate that the negative effect of elections is consistently robust as we increase the number of controls for lagging and leading months. The estimates are remarkably consistent when we control for up to 11 months of lags and leads. When we control for the 12 months lagging and leading the election, the size of the effect declines as does the significance.

[75] We also experiment with adding additional dummies for the lags and leads of the election month dummy variable. The results can be found in the Online Appendix.

[76] We also conducted several other robustness checks, which we briefly describe in the Appendix.

[77] Brandice Canes-Wrone and Jee-Kwang Park, "Electoral Business Cycles in OECD Countries," *American Political Science Review* 106, no. 1 (February 2012): 103-122.

[78] Adi Brender and Allan Drazen, "Political Business Cycles in New Versus Established Democracies," *Journal of Monetary Economics* 52, no. 7 (October 2005): 1271-1295; Min Shi and Jakob Svensson, "Political Budget Cycles: Do They Differ Across Countries and Why?" *Journal of Public Economics* 90, no. 8-9 (September 2006): 1367-1389.

[79] Shawn Cole, "Fixing Market Failures or Fixing Elections? Elections, Banks, and Agricultural Lending in India," *American Economic Journals*: Applied Economics 1, no. 1 (January 2009): 219-250; Stuti Khemani, "Political Cycles in a Developing Economy: Effect of Elections in the Indian States," *Journal of Development Economics* 73, no. 1 (February 2004): 125-154.

[80] There is another advantage to distinguishing between scheduled and unscheduled elections. Since elections in a parliamentary system can be considered endogenous, unscheduled elections might be related to economic factors that are correlated with changes in the construction sector. Hence, there is a concern that governments might call early elections for some reason that might also be correlated with changes in the economy that could impact the demand for cement.

[81] Ujjwal Kumar Singh, "Between Moral Force and Supplementary Legality: A Model Code of Conduct in Indian Elections," *Election Law Journal* 11, no. 2 (June 2012): 149-169.

[82] World Bank, *Doing Business in 2016.*

[83] Elwood S. Buffa and Rakesh K. Sarin, *Modern Production/Operations Management* (New York: John Wiley & Sons, 1987). "Continuous" production industries such as oil refining and cement are characterized by a discontinuous production function, increasing returns to scale, inelastic factor substitutability and high barriers to entry and exit.

[84]Reserve Bank of India, "Master Circular on Exposure Norms and Statutory/Other Restrictions – UCBs," July 1, 2009; Ila Patnaik, Ajay Shah, and A. Suri, "Managing Boom and Bust in Real Estate: What Lessons Can India Offer?" National Institute of Public Finance and Policy Working

Paper, 2011. Patnaik, Shah, and Suri find that penetration of commercial finance in the real estate sector is very low in India.

[85] "Property in Mumbai: The Minimum City," *Economist*, June 9, 2012.

[86] World Bank, *Urbanization beyond Municipal Boundaries: Nurturing Metropolitan Economies and Connecting Peri-Urban Areas in India*. This, in turn, is driven by artificial constraints on land use, which are kept in place in order to create "scarcity rents" for vested interests.

[87] Daniel W. Gingerich, "Dividing the Dirty Dollar: The Allocation and Impact of Illicit Campaign Funds in a Gubernatorial Contest in Brazil," Working Paper, Department of Politics, University of Virginia, 2010; Maxim Mironov and Ekaterina Zhuravskaya, "Corruption in Procurement and the Political Cycle in Tunneling: Evidence from Financial Transactions Data," *American Economic Review* 8, no.2 (May 2016): 287-321.

[88] Raymond Fisman, "Estimating the Value of Political Connections," *American Economic Review* 91, no. 4 (September 2001): 1095–1102; Asim Khwaja and Atif Mian, "Do Lenders Favor Politically Connected Firms? Rent Provision in an Emerging Financial Market," *Quarterly Journal of Economics* 120, no. 4 (2005): 1371–1411; Mara Faccio, "Politically Connected Firms," *American Economic Review* 96, no. 1 (March 2006):
369–86; Seema Jayachandran, "The Jeffords Effect," *Journal of Law and Economics* 49, no. 2 (2006): 397–425.

[89] Andrew Eggers and Jens Hainmueller, "MPs for Sale? Returns to Office in Postwar British Politics," *American Political Science Review* 103, no. 4 (November 2009): 513-533; Raymond

Fisman, Florian Schulz, and Vikrant Vig, "The Private Returns to Public Office," *Journal of Political Economy* 122, no. 4 (August 2014): 806–862.

[90] Sukhtankar, "Sweetening the Deal? Political Connections and Sugar Mills in India," is one exception here.

[91] Akhmed Akhmedov and Ekaterina Zhuravskaya, "Opportunistic Political Cycles: Test in a Young Democracy Setting," *Quarterly Journal of Economics* 119, no. 4 (November 2004): 1301–1338; Shi and Svensson, "Political Budget Cycles: Do They Differ Across Countries and Why?"; Brender and Drazen, "Political Business Cycles in New Versus Established Democracies."

[92] Susan E. Scarrow, "Political Finance in Comparative Perspective," *Annual Review of Political Science* 10 (June 2007): 193-210.