Politics, State Ownership, and Corporate Investments.*

Shashwat Alok† and *Meghana Ayyagari*‡

*The authors thank Artem Durnev, Amit Seru, Radhakrishnan Gopalan, Kateryna Holland, William Megginson, Nagpurnanand Prabhala, Anjan Thakor, Robert Weiner, and seminar participants at Annual Meetings of the American Finance Association (Philadelphia), Olin Brown Bag Seminar Series, Indian School of Business, Hyderabad, University of New South Wales, and University of Florida for their helpful comments and suggestions. Any remaining errors or omissions are our own.

†Assistant Professor, Indian School of Business, Hyderabad, India; Email: shashwat_alok@isb.edu

‡Associate Professor, School of Business and Elliott School of International Affairs, George Washington University; Email: ayyagari@gwu.edu

Politics, State Ownership, and Corporate Investment

Abstract

We document evidence of a political investment cycle in the investment decisions of state owned firms by using the constitutionally mandated election schedule in India as a source of exogenous variation in politicians' incentive to cater to voters. Using a unique project level database of new investments, we find that the number of capital expenditure projects announced by SOEs is higher in election years, especially in districts with close elections and districts with high-ranking politicians. These projects have negative announcement returns suggesting that political influence is value destroying. We do not observe these patterns in a placebo set of non-government firms or in off election cycle years.

JEL Classification: G31, G38, D72, D73, P16

Introduction

State owned enterprises (SOEs) are a substantial fraction of the corporate sector in both developing and developed countries.[1] In OECD countries alone, SOEs employ over 6 million workers and have a combined value close to USD 2 trillion with approximately 76% of the total value concentrated in non-financial sectors (Christiansen (2011)). There has been an intense debate, especially around the decisions by several economies to de-nationalize the real sector, on whether activities conducted by SOEs are better run by the private sector.[2] According to the theories on the politics of government ownership, SOEs are less efficient than private firms because they pursue political objectives at the cost of firm value maximization (Shleifer and Vishny (1994); Shleifer (1998); Stiglitz (1989, 1994)), Laffont and Tirole (1991), and Tirole (1994)). However, empirical evidence on what drives the efficiency wedge between the SOEs and private firms remains ambiguous.[3] In this paper, we provide the first cleanly identified micro evidence of politically motivated investments by non-financial SOEs.

The key econometric challenge in evaluating the role of political influence on the investment decisions of SOEs is in obtaining the counterfactual investment behavior in the absence of political interference. To circumvent this issue, we exploit the timing of elections in India as a source of exogenous variation in politicians' incentives to influence SOE investments. Our empirical design tracks the investments by both SOEs and non-government firms (placebo group) around election years. There are two novel components of this empirical design. First, we use data on state and national elections whose schedule is constitutionally mandated. Importantly, state elections in India are staggered across years, allowing us to control for time varying aggregate shocks. We exploit within district variation that account for time invariant differences in demographic and economic

[1] Kowalski et al. (2013) report that over 10% of the world's largest firms are state-owned. Also see López de Silanes et al. (1999) and Musacchio and Lazzarini (2012) for the role played by SOEs in developing economies.

[2] For instance, see Sappington and Stiglitz (1987), Boycko et al. (1995) and Musacchio and Lazzarini (2012).

[3] The theoretical literature argues that SOE inefficiency stems from politicians's objective to maximize personal and political objectives (the "political view" of government ownership as in Shleifer and Vishny (1994)) and agency problems because of the low-powered incentives of SOE managers (the "agency view" of government ownership as in Tirole (1994) and Dixit (1997). By contrast, other argue that SOEs maximize social welfare and cure market failures ("social view" of government ownership as in Atkinson and Stiglitz (1980), and Sappington and Stiglitz (1987)). The empirical evidence is mixed with some studies finding that SOEs underpeform their private counterparts (e.g. Kikeri et al. (1994), López de Silanes et al. (1999), Boubakri and Cosset (1998) and Bartel and Harrison (2005)) and others reporting ambiguous results (e.g. Funkhouser and MacAvoy (1979), Groves et al. (1994), Kole and Mulherin (1997), and Dewenter and Malatesta (2001)).

characteristics across districts.

Second, we use a rich and unique project-level dataset of capital investment projects announced in India by both SOEs and non-government enterprises. The data includes the location of the investment, industry, cost, identity of the promoters (owners), project status (whether it was just announced or is under implementation, or completed or stalled/abandoned) and various dates associated with project announcement and implementation. Importantly, information regarding the date of announcement allows us to track the stock market announcement effects of the projects and provides an indication of the NPV of these investments. This aspect to the best of our knowledge is unique to this literature. We merge our project level data with hand-collected district-level political variables from national and state elections held in India. Our panel data covers 18,981 investment projects announced over a period of 15 years (1995- 2009) that includes 4 national and 93 state elections, in 435 (594) national (state) electoral districts.

In univariate analyses, we see important differences between the nature and timing of the projects announced by SOEs and non-government firms. SOE projects tend to be focused in infrastructure sectors (63%) compared to projects of non-government firms (22%). SOE projects on average take significantly longer time to complete (3.68 years) than projects by non-government enterprises (2.02 years). Projects announced by SOEs during election years are 17% larger, and 6% more likely to be an infrastructure project compared to projects announced in off-election years. We do not see any difference in the likelihood of being abandoned or time taken for completion for SOE projects announced in election years vs. off-election years.

In multivariate analysis controlling for location fixed effects, we find that SOEs not only are more likely to announce projects in election years relative to off-election years, but also announce a greater number of projects during election years ("pork-barrel spending"). There is a 27.5% increase in the number of projects announced by SOEs owned by the local state governments (State SOEs) and a 17% increase in the number of projects announced by SOEs owned by the central government (Central SOEs) in a district in election years. We find no such patterns in the placebo group of non-government firms. Our results point to the existence of a political investment cycle where politicians manipulate investment of public enterprises around elections in order to signal their ability and garner voter support.

These effects are not homogeneously spread across the country. Rather, new projects by SOEs are more likely to be announced in districts where the previous election was closely contested (*Close* districts from now). Such politically motivated targeting of investments is only observed during election years. Specifically, relative to less competitive districts, close districts experience a 50% (35%) increase in investments by state (central) SOEs during election years. These results are consistent with theories on tactical redistribution that suggest that to the extent that politicians care about winning elections, the incentives to affect economic variables are stronger when elections are more competitive (Lindbeck and Weibull (1987); Dixit and Londregan (1996)).

When we look at the stock market's reaction to project announcements by "partially privatized SOEs", on average, announcement returns are negative, and lower for projects announced by SOEs during election years and for projects announced in politically competitive districts.[4] These results suggest that the markets view SOE investments as foregoing value maximization under political influence (i.e., they are negative NPV projects). A back of the envelope calculation using one-day announcement windows suggests that the costs of these politically motivated investment distortions are as high as $13 billion in terms of market capitalization for each election.

We conduct several additional tests that strengthen the interpretation of our findings and better clarify the underlying mechanism. First, we find that investment announcements by SOEs are higher in districts where the electoral representative is a Cabinet minister. This suggests that political hierarchy plays a role in where SOE projects are announced. Second, we find that our results hold when we look at just infrastructure projects and projects in industries with high employment growth. This suggests that two of the channels through which politically-driven investments attract votes are the promise of better infrastructure and greater employment. Third, we see that general policy uncertainty as measured by the Economic Uncertainty Index in Baker et al. (2016) has no impact on the investments of SOEs. However, consistent with Gulen and Ion (2016), we do find that policy uncertainty adversely impacts project announcements of non-government enterprises. This underscores that our results are driven not by overall uncertainty but by political motivations around election years. Finally, we find that election year investment announcements by SOEs have a positive impact on the outcome of elections in favor of the incumbent. On average, each addi-

[4] We do not find a relation between the size of the government stake and sensitivity of firm investments to elections.

tional project announced in a district leads to a 2.4% increase in the incumbent parties' margin of victory.

This paper relates to the growing literature linking politics to real decisions of firms. The first contribution of this paper is to present clear evidence in a relatively cleanly identified setting that politicians can directly distort allocation of capital in the real economy by influencing the investment decisions of SOEs. Recent studies on state owned banks (Khwaja and Mian (2005), Dinc (2005), Cole (2009), and Sapienza (2004)) and privatization (Dinc and Gupta (2011) and Netter and Megginson (2001)) find evidence consistent with political influence. Carvalho (2014) finds that in exchange for government loans, Brazilian manufacturers expand employment and investment in politically attractive regions. The sovereign wealth fund (SWF) literature also shows sovereign wealth fund investments to be associated with poor monitoring (e.g. Knill et al. (2012)), a SWF discount and poor long-term operating performance (e.g. Bortolotti et al. (2015a)). See Bortolotti et al. (2015b) for a survey of the SWF research. Karolyi and Liao (2017), on the other hand, study cross-border activities of sovereign acquirers and find that government acquirers are associated with higher announcement returns for the target firms and no higher failure rates. In contrast to these studies, our paper provides direct evidence in support of the political view of government ownership by showing the vulnerability of SOEs' investments to political interference.

The second contribution of this paper is to show that political considerations have very different effects on private firms versus SOEs. Julio and Yook (2012) and Durnev (2012) find that political uncertainty surrounding elections leads to a drop in investments and investment-sensitivity to stock prices during election years. Our paper shows that SOEs increase investment during election years to target voters. We also show that SOE investments are influenced specifically by political manipulations during election years rather than a general level of policy uncertainty as in Gulen and Ion (2016).[5] In contrast, the investments of non-government firms in our sample are more affected by general policy uncertainty and these effects are longer lasting, (consistent with Gulen and Ion (2016)), presumably because the policy uncertainty measure is an annual measure and captures the variation in policy uncertainty that may occur within elections or even just variation

[5] Gulen and Ion (2016) study a broader measure of policy uncertainty, which is the overall level of uncertainty in an economy arising from tax changes, fiscal and monetary policy, regulatory uncertainty and not just the effect of elections, and show that policy uncertainty dampens private firm investment, an effect that lasts beyond election years.

in news coverage.

Finally, our paper is unique in using project level micro data to assess the marginal value of politically motivated investments by SOEs. We show that projects announced by SOEs in election years and politically competitive areas are associated with negative stock price reactions (i.e., they are negative NPV). These findings add to the recent work that has found evidence of state-induced investment distortions such as that by Borisova et al. (2015) who find government ownership to be associated with higher cost of debt. These electoral consequences driving the political interference are presumably less important in foreign markets since Karolyi and Liao (2017) find that in cross-border acquisitions, targets of government acquirers display higher announcement returns than targets of private-sector acquirers. Few other studies provide *direct* evidence on how the politicization of firm investment may prove detrimental to a firm's public shareholders. An exception is Bertrand et al. (2006) who show that publicly-traded firms in France managed by politically connected CEOs increase hiring and rate of new plant openings in election years, especially in cities with more contested elections to help incumbent politicians in their bid for re-election. They also show that the accounting performance in these connected firms is lower than non-connected firms.

While the privatization literature has shown improvements in newly privatized firms compared to state owned firms (see Boycko et al. (1993), Megginson et al. (1994), and, Dewenter and Malatesta (1997, 2001)), other studies have argued that newly privatized SOEs in China run by politically connected CEOs still underperform non-government enterprises (Fan et al. (2007)) and also have weaker sensitivity of investment expenditure to Tobins Q (Chen et al. (2011)). In contrast to these studies, our paper uses granular data on individual investment projects that allows us to analyze how SOE investments differ from those of non-government enterprises. We are also able to better address endogeneity concerns than Fan et al. (2007) and Chen et al. (2011) by using election cycles to identify exogenous variation in politicians' incentives to influence SOE investments. Finally, above studies identify political connection by examining CEOs with government links but these CEOs are not under the direct jurisdiction of any politician. In contrast, in our sample, each SOE in India falls under the jurisdiction of a government ministry headed by a Cabinet minister who exerts direct control over the appointment of CEO and other top executives in the firm, who are

typically current or former (retired) government officials.[6] Thus, the government maintains direct influence over the SOEs through such appointments, allowing for a clean identification of political influence over SOEs. More details on the politicization of SOE governance are provided in the Web Appendix. Overall, our study complements the findings in the privatization literature by providing direct evidence on the underlying reason for poor investment efficiency of SOEs; political interference in the investments of these firms for electoral gains.

1 Hypotheses

Since the seminal work of Nordhaus (1975), there has been extensive theoretical research on political business cycles and political budget cycles (Rogoff (1990)) where incumbent politicians engage in pre-electoral manipulation of monetary policy and fiscal policy instruments to influence voting behavior. The incumbent stimulates the economy close to election time to increase probability of re-election and at the start of the new term, the inflationary effects of pre-electoral stimulation are eliminated with a recession. Empirically, there has been greater support for the manipulation of fiscal policy instruments (e.g. taxes, fiscal transfers, government spending) rather than monetary policy around elections (See Alesina and Sachs (1988), Drazen (2001), Brender and Drazen (2005), and Cohen et al. (2011)).

While both fiscal and monetary instruments can be used to boost economic conditions prior to an election, politicians can also try to influence the economy via the corporate sector. For instance, Shleifer and Vishny (1994) model the interests of politicians in having state-owned firms pay above-market wages and have excess employment to gain greater political support. Several papers have noted how politicians capture state owned banks to distort credit allocation decisions especially during election years (e.g. Sapienza (2004), Dinc (2005), Cole (2009), and Carvalho (2014)). The focus in our paper is on a political investment cycle to see if politicians manipulate the investment decisions of state owned enterprises to influence voting behavior. If the voters care about employment and infrastructure and reward politicians for improvements in their socio-economic

[6] We were able to hand-collect data on career histories for most of the listed SOEs (86%) and a sub-sample of the unlisted SOEs in our sample. In each instance, we verified that the CEO was either a current or former (retired) government official. In the Web Appendix, we provide a detailed discussion of the appointment of top management team and board members in Indian SOEs.

well-being, then politicians can boost the quality of infrastructure and employment opportunities in the short run by coercing SOEs to undertake new investment opportunities in the run up to the election. While our focus is on the use of micro-level business decisions to further political goals, the underlying spirit of the political business/budget cycle papers also applies to our setting.

To the extent that there are constraints on capital expenditures by SOEs, such election year investments will not be homogeneously spread throughout the economy but targeted towards certain regions. There are two basic and opposing models of distributive politics. On the one hand, "Tactical Redistribution" theories suggest that incentives to woo voters will be greater when elections are more competitive ("closely contested (Close) areas", see Lindbeck and Weibull (1987), Dixit and Londregan (1996)). This is because, in closely contested areas, small changes in share of votes received can substantially change the likelihood of re-election. On the other hand, the "Core Supporter" models (Cox and McCubbins (1986)) predict that political parties may choose to reward a select group of party loyalists, since the parties know their preferences best where as swing voters are riskier bets. A higher margin of victory indicates that the incumbent enjoys greater support among the voters (higher number of core supporters) and as such weaker competition from opposing candidates. Which of these two models is at play in our context is an empirical question and in our empirical tests, we distinguish between these two opposing theories and examine whether the extent of electoral competition impacts the location of election year investments by SOEs.

Finally, we develop predictions on the costs of politically motivated investments by SOEs. A large finance literature has documented that political factors, such as uncertainty related to elections and political changes, should be reflected in asset prices[7] and stock market volatility.[8] To examine whether these political factors are related to prices in our setting, we perform an event study around the announcement date of the projects by SOEs that are partially privatized. On the one hand, if election year investments by SOEs are positive NPV investments undertaken to signal superior administrative competence of the incumbent politicians (Rogoff (1990)), we would expect a positive stock price reaction. On the other hand, if the investments by SOEs are negative NPV investments pursued due to political factors and at the expense of firm value (Shleifer and

[7]See Bernhard and Leblang (2006); Foerster and Schmitz (1997); Santa-Clara and Valkanov (2003); Knight (2006); Snowberg et al. (2007); Pastor and Veronesi (2012)

[8]See, for e.g., Białkowski et al. (2008) and Boutchkova et al. (2012)

Vishny (1994)), then we would expect a negative stock market reaction to these projects. We would also expect these reactions to be larger for SOE projects in election years and in closely contested districts (if "Tactical Redistribution" theory holds) or districts where incumbents have greater voter support (if "Core Supporter" theory holds).

2 Data, Key Variables and Summary Statistics

2.1 Electoral Data

Our electoral data spans the period 1995-2009 and is collected from the Election Commission of India. We include data on 4 national elections and 93 state elections held across 30 states during our sample period. We aggregate all electoral data at the district level by matching electoral constituencies to districts based on "Delimitation Of Parliamentary And Assembly Constituencies Order" (2008 and 1977) published by the Election Commission since the data on location of new projects is only available at the district level. We have 435 (594) districts for national (state) elections in our final sample.[9]

Our main independent variables are as follows: *Election* is a dummy variable that takes the value 1 for the fiscal year immediately preceding the election.[10] While elections are held once every 5 years as per the Constitution of India, some elections may be called early typically due to a change in a coalition leadership. In our sample, 1 out of the 4 national elections and 13 out of the 93 state elections were held before schedule. The Web Appendix discusses in detail the reasons why the 13 elections were held before schedule. Thus, the different states of India have different 5 year election cycles because historically some states have called early elections at varied points in time for different reasons. Figure WA1 in the Web Appendix plots the number of state elections each year and also shows the relationship between the timing of state and national elections.

[9] The electoral constituencies for national elections are significantly larger than the constituencies for state elections. For instance, about 102,238 votes were polled in median state electoral constituency compared to 655,010 votes in national electoral constituency in our sample.

[10] Elections in India are usually held between the months of April and May of the scheduled year. For instance, voting for the 2009 National elections commenced on 16th April, 2009 and concluded on 13th May, 2009. The fiscal year in India starts April 1st every year and ends March 31st of the following year. So, for 2009 elections, *Election* will take the value 1 for the fiscal year beginning on 1st April, 2008 and ending on 31st March, 2009. 1 year before election would take the value 1 for fiscal year ending in 2008 and 1 year after election would take the value 1 for fiscal year ending in 2010. Other lead and lag variables are similarly defined.

If politicians call for early elections when the state economy is doing particularly well and investments are booming, we may observe a spurious correlation between election years and number of investment projects announced. Hence, following Khemani (2004) and Cole (2009), we instrument *Election* using *Scheduled*, a dummy variable that takes the value 1 if 5 years have passed since the last state election and 0 otherwise.[11] More details are provided in Section 3.2.

Our measures of political competition are based on the difference in share of votes received by the ruling coalition and opposition parties in a district in the previous election (margin of victory). *Absolute margin* is the absolute value of the margin of victory. A lower value of absolute margin of victory indicates a more competitive election. *Close* is a dummy variable that takes the value 1 if the absolute margin of victory is less than 5% and 0 otherwise. *Majority* is a dummy variable that takes the value 1 for districts if the absolute margin of victory of the incumbent party was above the 75th percentile. We believe outcomes of the last election are a reasonable proxy for the expected level of competitiveness in the current election. So, if elections occurred in years 1999 and 2004, we assign the value of *Close* and *Majority* realized in year 1999 to the years 2000-2004.[12]

For each of these state and national elections, we also collect data on the name, political affiliation, and share of votes received by all candidates in each electoral constituency, covering over 35,000 electoral contests and 40,000 unique candidates. Data on members of the ruling party coalition was hand-collected from newspaper articles using the Factiva database. Information on the identity of members of the Federal cabinet, including information on Cabinet reshuffles was collected from archives of parliamentary debates.[13] To measure political authority we examine whether the electoral representative holds a ministerial position: *Federal minister* is a dummy variable that identifies districts in which the Member of Parliament is also a minister in the Federal Cabinet.

Table 1 reports summary statistics on key electoral and investment variables for the national

[11] In robustness tests, we find all our results to hold if we were to just drop unscheduled elections rather than using an instrumental variables approach.

[12] Similar proxies have been used by Mian et al. (2010) and Carvalho (2014). In unreported tests, we verify that there is persistence in election outcomes. We find that districts that were closely contested in the previous national (state) election have a 34% (33%) chance of facing a close contest in the current election.

[13] Unlike the publicly available parliamentary debates, we were unable to obtain the state legislature debates for each of the individual states and so we do not have the data on members of state cabinets. Hence our analysis on political authority and jurisdiction in Section 4.7 is restricted to Federal ministers and national elections.

elections in panel A and state elections in panel B. The unit of observation is a district-year. For each election cycle, we drop those constituencies where both the winner and losers were members of the ruling coalition.[14] These leaves us with an unbalanced panel of 5081 (8456) district-year observations for national (state) elections.

Focusing on political variables, Panel A of Table 1 shows that for 27.9% of our observations there was a national election in the following year. The median value of absolute margin is 0.104 for national elections suggesting that there is stiff political competition at the district level. 27.2% of the national electoral district-years are classified as closely contested. Panel B of Table 1 shows that for 20.9% of our observations there was a state election in the following year. The median value of Scheduled shows that 17.6% of our observations are for state elections that were held on schedule. State elections seem to be equally competitive with the median value of absolute margin being 0.075 and 37.3% of the state electoral district-years classified as closely contested.

2.2 Investment and Financial Data

Data on new project announcements is obtained from the CAPEX database maintained by the Centre for Monitoring Indian Economy (CMIE). CAPEX provides detailed information on the date of announcement, location, cost, identity of the sponsor and industry classification for new and ongoing projects announced in India since 1995.[15] This information is collected from multiple sources including company annual reports, media reports and government agencies when projects require bureaucratic approval. Our inquires to CMIE reveal that any project costing more than Rs. 10 million (approximately $0.2 Million) is likely to be covered by the database. Over 24,000 projects were announced during our sample period (1995-2009). CAPEX is updated daily and also furnishes

[14] India has a multi party system with over 450 parties contesting elections and it is therefore common to see coalition governments. Members of a coalition sometimes fail to resolve conflict regarding allocation of electoral seats and contest against each other. Since our analysis is driven by the political contest between incumbent parties and opposition parties in a district, we drop all constituencies where both the winner and loser were members of the ruling coalition (i.e they were incumbents). All our results remain robust to including constituencies where both the winner and losers are from the ruling coalition.

[15] According to CMIE, a "project" is any intention by a company to setup a "specific additional productive capacity" in India. It could be an intention to set up a steel plant or to build an irrigation canal or to set up a call-centre facility. Figure WA2 in the Web Appendix provides a snapshot summary of information provided in CAPEX for a particular project.

information on the current status and expected time of completion of the project.[16] Figures WA3 and WA4 in the Web Appendix present the total number of projects and the total reported cost of all projects announced each year respectively. The dashed lines in the figures coincide with the year of national elections.

For each investment project in the database, CMIE identifies as primary owner the entity with majority equity stake and all other promoters (or owners) who have an equity stake in the project. Following this, we classify projects as owned by Central SOEs (Central Government has majority equity stake), State SOEs (State Government has majority equity stake) or non-Government (private owner has majority equity stake).[17] The classification of SOEs as Central or State SOEs is provided by CMIE which we validate using the list of Central and State SOEs provided by the Department of Public Enterprise. The state and central governments can only directly influence the decisions of SOEs under their respective control. Consequently, in our tests using national elections we focus on the projects announced by central SOEs and in the tests based on state elections, we focus on the projects announced by state level SOEs. We believe that this separation allows for cleaner identification of political influence.

This database provides unique advantages to analyze our research question. First, while we could have used data on capital expenditures at the firm level to understand investment behavior, this would not allow us to identify targeting of investments towards politically important locations such as "Closely contested" districts. In addition, aggregate capital expenditure provided in balance sheet statements will lead to errors in estimation if we are unable to differentiate expenditure due to new investments from expenditure on maintenance of plant and property. Having project-level data allows us to overcome these issues and to undertake a detailed analysis of political investment cycles. Second, information on the date of announcement allows us to assess the NPV of these investments by tracking announcement returns.

[16] CAPEX data serves as the source for several Government publications including the annual Private Corporate Investments Growth and Prospects put out by the Reserve Bank of India. As also reported on the CMIE website, State governments are intensive users of CapEx as this helps them track new investment projects being set up in the country as a whole and in their own State. Overall, we are comfortable that the coverage of CAPEX is not biased around election years.

[17] Most of the projects in our sample are associated with a single firm and only 7% of our sample are classified as joint ventures. Importantly, only 1.8% of the projects are joint ventures between SOEs and non-government firms. In case of such projects, we assign ownership as SOE or private firm based on majority equity stake. None of the projects in our sample are 50-50 joint ventures where the SOE owns 50% and a private firm owns 50%. All our results are robust to dropping joint venture projects from our analysis.

Our main dependent variables are as follows: *Number of projects* announced in a district in a year. This variable is defined separately for project announcements by SOEs and non-government firms. *Announced* is a dummy variable that takes the value 1 if at least one project is announced in the district in a given year and 0 otherwise. Again, this variable is defined separately for SOEs and non-government firms. *Percentage of government-owned projects* is the ratio of total projects announced in a district by SOEs to the total number of projects announced in a district by all firms in a particular year. We drop all projects with missing date and those for which CAPEX does not identify a unique district. This leaves us with a total of 18,981 projects announced during our sample period, of which 1938 and 3630 projects were initiated by central and state SOEs respectively. In contrast, non-government firms announced 13,413 projects.

Panels A and B of Table 1 show that on average, a greater number of projects are announced in a national electoral district-year (2.896) than a state electoral district-year (2.328). But this seems to be driven by the non-government firms since state SOEs announce a greater number of projects (0.396) than Central SOEs (0.283) in a electoral district-year. The *Announced* dummy shows that at least 1 project was announced in more than 50% (42%) of the national (state) electoral district-years. This is expected since on average the size of the aggregated districts are greater for national elections.

For a smaller sub-sample we also use an alternate dependent variable - *Project Value Ratio* which is the ratio of the total cost of all projects announced by state SOEs in a district to the total cost of all projects announced in the district. We don't present these results as our main specification since the cost of the project is missing for approximately 20% of the projects in our sample. Thus the total cost of projects reported for a district under-estimates the true cost since we don't have data on some projects.[18]

[18]Since the project cost estimates are missing for 20% of our sample and may be revised over time, aggregating the cost at the firm-level may not align with the total capital expenditures on the firm's financial statements. Nonetheless, we compare the total cost of all projects announced by a firm during our sample period with the gross investments in fixed capital available from the firm's financial statements for the publicly listed firms in our sample. The correlation between project cost from CAPEX dataset with the investments in gross fixed assets is 66% for the full sample. The correlation is even higher for SOEs at 87%.

3 Empirical results

3.1 Project Characteristics

In panel A of Table 2, we compare the differences in characteristics of projects announced by SOEs versus non-government firms. Focusing on the set of completed projects, we find that on average SOE projects take longer time to complete (3.68 years as compared to 2.02 years for non-government firms) and longer time to start implementation following announcement (1.64 years as compared to 0.94 years for non-government firms). Our data allows us to identify whether the project is a substantial expansion of an existing plant, a completely new unit, or a minor renovation. 91% of SOE projects are new units or substantial expansion units (as opposed to minor modifications/renovations) compared to 99% of projects of non-government firms. SOE projects are on average 23% smaller in size (measured by natural log of estimated cost of the project) compared to projects of non-government firms. Interestingly, a majority of SOE projects are in the infrastructure sector. About 63% of the projects announced by SOEs are in the infrastructure sector. In contrast, only 22% of the projects announced by non-government firms are in this sector. Finally, SOE projects are on average less likely to be stalled or abandoned. About 7% of projects announced by SOEs in our sample were abandoned compared to 11% for non-government firms SOE. As an alternate classification, we classify projects as stalled/abandoned if they have either been stalled/abandoned or if more than 10 years have passed since the date of project announcement and the project status shows "Announcement" or "Under Implementation Using this definition, we find that 9% of projects announced by SOEs and 12% of the projects announced by non-government firms are abandoned or stalled.[19]

In panel B of Table 2, we examine whether the nature of projects announced in election years is different from that of projects announced in off-election years. Focusing on columns 1-3, we find that compared to off-election year SOE projects, election year projects announced by SOEs are on average 17% larger, 6% more likely to be an infrastructure project, and 3% more likely to be new unit/substantial expansion. We do not find that election year projects announced by SOEs are very

[19]Note that this alternate classification is noisy and may not always be correct. For instance, one of the projects in our dataset is the Shirdi Airport Project which was announced in 2001 and lay dormant for a while before being eventually completed in November 2016.

different from off-election year projects with regards to the time it takes to start implementation or complete a project. With regards to the likelihood of being stalled, using our primary definition we do not find any significant difference between election and off-election year projects announced by SOEs. However, using our alternate classification, we find that a higher fraction of (3%) election year projects announced by SOEs are stalled. Overall, these findings are in line with our thesis that SOEs increase investments during election years to cater to voter preferences. Collectively, these results suggest that politicians focus on announcing projects that seek to attract voters either by means of improvements in infrastructure or employment prospects (by means of larger projects and opening new units).[20]

We also see differences between election and off-election year for non-government firms. Election year projects announced by non government firms are 36% smaller, 5% less likely to be an infrastructure project, and 1% less likely to be new unit/substantial expansion. This is consistent with the evidence in Julio and Yook (2012) and Gulen and Ion (2016) who find that political and policy uncertainty is associated with a drop in investments of firms. Along similar lines, our univariate statistics suggest that non-government firms refrain from substantial expansions during election years and typically announce smaller routine projects.

3.2 Election cycle and Investments

The key econometric challenge in evaluating the role of political influence on SOE investment decisions is obtaining the counterfactual investment behavior in the absence of political interference. Our empirical setting addresses this issue by exploiting the timing of elections as a source of exogenous variation in politicians' incentives to influence investments by SOEs. The Indian Constitution mandates that both national and state elections be held every 5 years and so except in rare cases when elections are called early, the timing of elections is likely exogenous to local market supply and demand conditions since they are pre-specified. The identifying assumption is that around elections, politicians have a strong incentive to alter the investment behavior of SOEs in a way that

[20] In unreported tests, we find similar results in multivariate analysis at the project level where we control for *ROA*, *Debt/Assets*, *Size*, *Tobins' Q* and *Industry fixed effects*. We find that election year projects announced by SOEs are more likely to be new units or substantial expansions. Furthermore, relative to projects announced by non-government firms, projects announced by SOEs during election years are larger as measured by the estimated cost, and more likely to be in the infrastructure sector.

allows them to woo voters. Formally, our main empirical specification is as follows:

$$Y_{ijt} = \alpha_0 + \beta_1 \times Election_{it} + \beta_2 \times C_{it} + \mu_j + \mu_t + \varepsilon_{ijt} \quad (1)$$

where subscript i refers to the state, j refers to the district and t refers to the time period. The dependent variable Y is one of the following variables: *Number of projects* announced, *Percentage of government-owned projects, Announced* and *Project Value Ratio*. We estimate the regressions separately for SOEs and non-government firms that serve as a placebo group. The coefficient of interest is β_1, which captures the impact of political interference on investment behavior. C_{it} refers to state level *Annual per capita* GDP *growth*. μ_j are district fixed effects that absorb time invariant differences across districts. μ_t are year fixed effects that control for macro-economic shocks. Standard errors are clustered at the district level.

Panel A of Table 3 presents results for national elections and panel B presents results for state elections. The positive and significant coefficient on *Election* in column 1 indicates that central SOEs announce greater number of projects during election years. For the average district in our sample, the coefficient estimate of 0.048 translates into approximately 17% increase in the number of projects announced in that district during election years.[21] This is consistent with the idea that politicians manipulate investments of SOEs to serve their own political interests. In column 2, we don't find the same pattern in a placebo group of non-government firms. While the negative sign of the coefficient is consistent with the evidence in Julio and Yook (2012) who find that political uncertainty is associated with a drop in corporate investments, the estimate is statistically indistinguishable from zero. The estimates from column 3 show that central SOEs announce greater number of projects during elections relative to projects announced by other firms as well. Column 4 shows that the likelihood of a project being announced in a district by central SOEs is higher for election years. Again, this effect is not observed for projects announced by non-government firms in column 5.[22]

[21] The mean number of projects announced in an electoral district is 0.283 (National) from Table 1. Since election years are on average associated with 0.048 increase in number of projects announced in a district, this translates into $\frac{0.048*100}{0.283}$=17% increase in number of projects announced in a district.

[22] While the dependent variable in columns 4 and 5 is a binary variable, our estimations are based on OLS. All our results are robust to using logit or probit specification instead of OLS. However, we do not report logit or probit estimates as our main specification because controlling for district fixed effects introduces the incidental parameters

In column 6, as an alternate dependent variable, we use Project Value Ratio, the ratio of total costs of investments by SOEs to total costs of investments by both SOEs and non-government firms. We find that the fraction of the total value of investments announced in a district by central SOEs are 1.5% greater in election years in absolute terms. This represents a 20% relative increase in the fraction of district level investments by SOEs in the election year.[23] We don't present these results as our main specification in the earlier tables since the cost of the project is missing for approximately 20% of the projects in our sample. Accordingly, in our analysis, we exclude all district-years where a project was announced but the cost of the project was missing in our data. This introduces some measurement error in our regressions and is likely to bias our estimates.

In Panel B, we analyze the impact of state elections on corporate investments of state SOEs and in panel C, we present estimates from an instrumental variables regression to address the concern that early elections may bias our estimates if the decision to call an early election is related to the economic environment. For instance, politicians may hold early elections when the economy is booming if they believe that voters are likely to attribute economic success to their efforts. While the placebo test with non-government firms addresses this issue to an extent, we exploit the fact that state elections in India are not synchronized and so different states have elections in different years. Thus, we are able to instrument for the timing of state elections using the 5 year schedule of elections, *Scheduled* as in Khemani (2004). The first stage specification in these tests is:

$$Election_{it} = \alpha_0 + \beta_1 \times Scheduled_{it} + \beta_2 \times C_{it} + \mu_j + \mu_t + \varepsilon_{it} \tag{2}$$

Since most of the elections are held on time, *Scheduled* is a strong predictor of the actual occurrence of elections and clearly satisfies the inclusion restriction. The coefficient on *Scheduled* in the first stage regression (not reported here for brevity) is 0.95 (standard error 0.005) with an R^2 of 0.80. Thus the election schedule is a strong predictor of actual occurrence of elections. Tests based on Stock and Yogo (2005) critical values confirms the strength of our instrument. Further, it is reasonable to assume that the schedule of elections has no bearing on investments of SOEs other

problem which can lead to inconsistent estimates of our coefficients of interest.

[23] On average the fraction of total value of investments announced in a district by SOEs is 7.5%. So 1.5% translates into a $\frac{1.5 \times 100}{7.5} = 20\%$ relative increase.

than through the timing of the actual elections and therefore satisfies the exclusion restriction.

Panels B and C of Table 3 confirm the results in Panel A for state elections. State SOEs announce greater number of projects during election years and there is no evidence of a political investment cycle for non-government firms. The coefficient estimates from both the OLS (panel B) and instrumental variable specifications (panel C) are similar suggesting that endogeneity in the timing of elections (early elections) does not bias our estimates. For the average district in our sample, the IV coefficient estimate of 0.109 translates into approximately 27.5% increase in the number of projects announced in a district during election years.[24] The results are qualitatively similar using other dependent variables in columns 3, 4, and 6. Focusing on columns 2 and 5, again we do not observe a similar pattern in the investments of non-government firms.

We undertake several additional tests to check the robustness of our results. First, one may be worried that our results may be driven by potential correlation between business cycle and national election cycles. However, to the extent that business cycles should impact both SOEs and non-government firms, we should expect to see similar pattern in investments of non-government firms. Specifically, non-government firms act as a placebo group for us and the fact that we do not observe similar variation in investments of such firms around elections alleviates this concern to a large extent. Nonetheless, for cleaner identification, we repeat all our tests by focusing only on off national-cycle state elections (see columns 1-3 of Table A1 of the Appendix), which should arguably be uncorrelated with aggregate business cycles. We find our results to be consistent in this sub-sample strengthening the causal interpretation of our findings.

Second, in columns 4-6 of Table A1 of the Appendix, we repeat the state level tests after dropping all un-scheduled elections. The results are both qualitatively and quantitatively similar to our baseline results reported in panels B and C of Table 3. If anything, the coefficient estimate on Election dummy is slightly higher at 0.117 (see column 4) as compared to 0.106 in panel B, column 1 of Table 3. This suggests that including unscheduled elections in our tests induces a downward bias in our estimates. In columns 7-9 of Table A1, we repeat our analysis focusing only on elections held before schedule. We do not find any significant increase in the number of

[24] Note from Table 1 that mean value of number of projects announced in an electoral district is 0.396 (State). Since, election years are on average associated with 0.109 increase in number of projects announced in a district. This translates into $\frac{0.109*100}{0.396}$=27.5% increase in number of projects announced in a district.

projects announced by SOEs for this subsample of un-scheduled elections. This suggests that our estimates are primarily identified through variation in timing of elections held per schedule. With early elections, the sudden nature of these elections does not allow the incumbents sufficient time to respond. In addition, President's rule is usually imposed before un-scheduled elections wherein the existing government ceases to exist and consequently has no authority to influence SOE decisions.

Finally, in Table A2 of the Appendix, we repeat our analysis on a smaller sample of partially privatized SOEs for which we are able to examine announcement effects in Section 3.6. Our results are qualitatively similar for this subset. This is to be expected since despite being privatized, the government of India has retained majority controlling stake in these firms. The mean (median) value of government stake in a publicly listed SOE in our sample is 74.48% (75.63%).[25]

Overall these tests further strengthen the causal interpretation of our findings and suggest that our estimates are primarily identified through variation in timing elections held per schedule. Going forward, we only report the results for state elections where the staggered nature of elections across time allows for cleaner identification. We obtain qualitatively similar results for national elections in unreported tests.

3.3 Political competition, Patronage and investments

To distinguish between the "Tactical Redistribution" and "Core Supporter" explanations, we employ a difference-in-differences strategy. Specifically, we first compare the investment behavior of SOEs around elections in districts in which the last election was *Closely contested* relative to other districts. Next, we examine the investments of SOEs around elections in districts in which the incumbent party won the previous election by a significant margin (*Majority* districts). The formal empirical specification is as follows:

[25]One potential concern here could be that delayed privatizations (due to electoral consequences as suggested by Dinc (2005)) can mechanically result in greater number of SOEs and consequently greater number of projects announced in election years. However, the Government retains majority stake in most of the partially privatized Central SOEs and all of the 4 partially privatized State SOEs and consequently there has been little to no change in the number of SOEs on account of privatization.

$$Y_{ijt} = \alpha_0 + \beta_1 \times Election_{it} + \beta_2 \times Close\backslash Majority_{ijt} + \beta_3 \times Election_{it} \times Close\backslash Majority_{ijt} + \gamma \times C_{it} + \mu_j + \mu_t + \varepsilon_{ijt} \quad (3)$$

The coefficient of interest in these tests is β_3 which measures the increase in investments announced in closely contested districts in election years relative to off-election years. The identifying assumption in these tests is that any potential difference between closely contested and non-closely contested districts (other than political interference) that is also likely to be correlated with investments remains the same between election and off-election years. Again, we exploit within district variation and employ district fixed effects to control for all time-invariant differences across districts.

In columns 1-4 of Table 4, we test the "Tactical Redistribution" hypothesis that argues that politicians will woo voters in districts in closely contested states who are more likely to vote opportunistically. The coefficient of the interaction term, *Election X Close,* in column 1 of Table 4 is positive and significant indicating that on average, central SOEs' investments are especially greater in closely contested districts during election years. These effects are also economically significant, translating into a 50% increase in investments announced by state-SOEs in closely contested districts in election years relative to other districts.[26] We find no evidence of the impact of political competition on investment decisions of non-government firms in column 2. The estimates from column 3 and 4 show that both the percentage and value of projects announced by SOEs relative to the investments made by other firms is higher for closely contested districts in election years.

In columns 5-8 of Table 4, we examine the "Core Supporter" hypothesis that predicts that politicians will reward their supporters and announce greater investments in districts where they enjoyed greater vote share. In particular, we analyze investments in districts where the incumbents won the previous election by a significant margin.[27] Focusing on the coefficient of the interaction term, *Election X Majority,* in column 4, we do not find empirical support for the "Core Supporter" hypothesis. This is likely because SOEs have limited capital to allocate across projects. By revealed

[26] Note from Table 1 that mean value of number of projects announced in an electoral district is 0.396 (State). Since, election years are on average associated with 0.203 increase in number of projects announced, this translates into $\frac{0.203*100}{0.396} \approx 50\%$ increase in number of projects announced in a district.

[27] In unreported tests, we use alternate cut-offs (85th, 90th and 95th percentiles) to classify majority districts and obtain similar results.

preference, the incumbent party finds it optimal to target election years investments towards closely contested regions as compared to areas where they already enjoy greater electoral support. Given that we do not find evidence in support of the "Core Supporter" hypothesis, in the latter tests we focus only on examining the implications of the "Tactical Redistribution" hypothesis.[28]

Overall, the results in this section provide support for the Tactical Redistribution hypothesis where politicians target voters in closely contested districts by announcing a greater number of investment projects by state owned enterprises in election years.[29] We obtain qualitatively similar results for national elections in unreported tests.

3.4 Inter-temporal dynamics of SOE Investments

The results in the above sections provide evidence on the cross-sectional nature of political capture of SOE investments. In this section, we explore temporal variation in capture by examining the variations in investment patterns of firms over the election cycle in Table 5. We first report results for the main effect of election cycles on investment announcements and then analyze how the relationship between the extent of political competition and investments in a district varies over the election cycle. The political budget cycle literature predicts that politicians and voters care more about allocation of resources prior to elections, than in other periods. Thus, investment distortions should be larger during election years than non-election years. If electoral incentives were not a key driver of SOE investments, we would not expect to see any variation with the electoral cycle. While either cycles or cross-sectional variation could be caused by reasons other than electorally-motivated manipulation, it is very unlikely that the cross-sectional relationships would change over the electoral cycle for any reason other than tactical redistribution. Hence we estimate the following regression:

[28] For robustness, in unreported we repeat all our tests with majority districts and do not find evidence consistent with "Core Supporter" hypothesis.

[29] These tests also help address the concern that our results could be explained by potential CEO turnover in SOEs after elections (Pan et al. (2016)). These tests are identified not just by the variation in timing of the election but cross-sectional variation across districts with regards to the margin of victory. Thus, it is not immediately obvious why the impact of CEO tenure on SOE investments should be different in *close* districts. Further, in unreported tests, we do not find any impact of election cycles on the likelihood of CEO turnover in SOEs.

$$Y_{ijt} = \alpha_0 + \sum_{1}^{4} \eta_n \times Close_{jt} \times Sc_{-njt} + \phi \times Close_{jt} + \sum_{1}^{4} \beta_n \times Sc_{-njt} + \gamma \times C_{it} + \mu_j + \mu_t + \varepsilon_{ijt} \quad (4)$$

where Y is *Number of projects* announced in a district by state SOEs and non-government enterprises or the *Percentage of government owned projects* announced by state SOEs in a district. n takes values 1 to 4 and Sc_{-n} are dummy variables that takes the value 1 if the next scheduled election is in n years and zero otherwise. Since an election cycle spans 5 years, $Sc_{-4} = 1$, 1 year after the most recent election and 4 years before the next scheduled election, $Sc_{-3} = 1$, 2 years after an election and 3 years before the next scheduled election and so on.[30] The coefficients β_n measure the district level investments of SOEs n years before the next election (1 year after the recent election) relative to the election year. The coefficient ϕ on *Close* captures the difference in investments announced in closely contested districts relative to other districts during election years. The coefficient η_n is a difference-in-differences estimate that captures the difference in investments in closely contested districts relative to other districts compared to the same difference during election years.

In column 1 of Table 5, we find that investment announcements by SOEs are lower in all off-election years relative to election year. It is likely that these firms over-invest during election years which leads to a decrease in investments in the years following elections. The absolute magnitude of coefficient estimates varies from 0.085 (1 year before elections) to 0.203 (1 year after elections). In percentage terms, these estimates imply that the number of projects announced by SOEs is 21% (51%) greater during election years as compared to the year before (the year after) elections. Focusing on non-government enterprises in column 2, we find that the difference in number of investments announced in election years and those announced one year before, two years before, and one year after is statistically indistinguishable from zero. However, we find that investments of non-government firms peak in the middle of the election cycle. This suggests that non-government enterprises invest conservatively immediately after and before elections probably due to policy

[30]For instance elections were held in the Indian state of Karnataka in April 2004. Election year is defined as the fiscal year ending in March 2004, $Sc_1 = 1$ for the fiscal year ending in March 2003. Similarly, $Sc_4 = 1$ for the fiscal year ending in March 2000.

uncertainty (Julio and Yook (2012), Gulen and Ion (2016)).

One concern with these findings is that the results may be driven by potential correlation between business cycle and election cycles. However, this would require each state to follow its own business cycle. Moreover, to the extent that business cycles should impact both SOEs and non-government firms, we should expect to see similar pattern in investments of non-government firms. In addition, our tests based on off-national cycle state elections mitigate such concerns. Nevertheless, in column 3, we test for the cyclical variations in relative number of projects announced by state-SOEs as compared to non-government firms. We see a 2% to 5% drop in the percentage of projects announced by state SOEs in off-election years. This is economically significant given that no project is announced by state-SOEs in a median district-year and the mean value of the percentage of projects announced in a district-year is 10%. In unreported tests, we obtain qualitatively similar results for national elections.

In the next set of tests, we analyze how the relationship between the extent of political competition and investments in a district varies over the election cycle. Column 1 shows that state SOEs strategically announce new projects during election years in districts in which the incumbent party faced tough competition from opponents during the previous election. The number of projects announced in a district during election years is 58.2%[31] greater for close districts. The difference in investments between closely contested districts and other districts in off election years is given by $\eta_n + \phi$. A test of statistical significance of $\eta_n + \phi$ shows that the estimates are statistically indistinguishable from zero for all off-election years except 1 year before election. We present these results graphically in Figure 1.1. Focusing on Figure 1.2, we find that non-government firms do not invest preferentially in closely contested districts. We observe no cyclical pattern in the investments of non-government firms as shown in Figure 1.2. The difference in investments of these firms across closely contested and other districts remain flat and is statistically indistinguishable from zero over the entire election cycle.

Overall, the results in Table 5 show evidence of a political investment cycle where there is an increase in the number of capital investment projects announced by state owned enterprises in

[31] $\frac{0.226*100}{0.388}$, where average number of projects announced by state SOEs in less contested districts during election years is 0.388

election years. We also find support for the Tactical Redistribution hypothesis. We find no evidence of a political investment cycle in the investments of non-government firms.

3.5 Additional Discussions and Robustness tests

3.5.1 Policy Uncertainty

To explore if SOE investments are in response to overall economic uncertainty rather than just political manipulation around election years, we replace the *Election* year dummy variable in our main specification in Table 3 with the *Policy Uncertainty* index from Baker et al. (2016). While the election variable measures political uncertainty arising around election years, the policy uncertainty index measures the overall level of uncertainty in an economy arising from tax changes, monetary policy, and regulatory uncertainty.

In Table 7, we report the results from these tests. Following Gulen and Ion (2016), we examine the impact of policy uncertainty both on current project announcements by SOEs (column 1), as well as projects announced one, two, and three years (columns 2-4) hence. In columns 5-8, we repeat these tests for projects announced by non-government firms. Our results show no impact of policy uncertainty on investment announcements of SOEs. However, we find that policy uncertainty is negatively associated with new investments by non-government firms both in the contemporaneous year and one year hence and begins to taper off after that. This is consistent with Gulen and Ion (2016) who document that policy uncertainty affects investments of U.S. firms upto eight quarters into the future after which, the effects begin to decay.

Overall this section shows that SOE investments are sensitive to political interference especially during election years whereas investments of non-government firms are more sensitive to policy uncertainty where the real effects last beyond election years.

3.5.2 Political authority and ideology

Governments' budget constraints make it unlikely that politicians reward their supporters across all districts uniformly. Thus given finite resources and limited capital available for investments,

incumbent parties may cherry pick districts to suit the interests of their main leaders who rank higher up in the political hierarchy. Our measure of political authority is whether the electoral representative holds a ministerial position: *Federal Minister* is a dummy variable that identifies districts in which the Member of Parliament is also a minister in the federal Cabinet. There is sufficient variation in the identity of ministers and consequentially the districts associated with federal ministers, allowing us to exploit within district variations in our tests. Cabinets are often reshuffled before the termination of an electoral cycle and individuals may lose their ministerial positions due to internal conflicts within the party or as a result of losing favor with the top party leadership. *Federal Minister* dummy variable captures all such changes.

To examine the importance of political authority, we use a specification similar to Equation 3 replacing *Close* dummy with *Federal Minister* dummy in Table 8. We only have the list of ministers at the federal level, so these tests are carried out for national elections.

Column 1 shows that the home district of federal ministers attract a greater number of investments by SOEs even during off-election years. On average, the number of projects announced by central-SOEs is 43% greater in the home districts of federal ministers during off-election years as compared to other districts.[32] In column2, we repeat the tests for investments by non-govt firms and do not observe a similar pattern. Our results in column 3 using the proportion of total projects announced by SOEs are consistent with the results from column 1. Overall these results suggest that SOEs announce a greater number of projects in the home district of ministers over the entire election cycle (both election and off-election years).

In Table A3 reported in the Appendix A, we also examine whether the political leaning (left/right) of the incumbent party impacts the SOE investments. Even though India is a multi-party system, at the national level, there are two major parties - centre-left Indian National Congress (INC) and centre-right Bharatiya Janata Party (BJP). In panel A, we focus on national elections and find that the the increase in SOE investments is 67% greater during election years when the incumbent party is left-leaning. At the state level there are a large number of smaller regional parties that contest elections which cannot be clearly classified as left-leaning or right-leaning parties. In panel

[32]Note from Table 1 that mean value of number of projects announced in an electoral district is 0.283 (National). Thus the coefficient estimate of 0.122 translates into $\frac{0.122\times100}{0.283}$ =43% increase in number of projects announced in a district.

B, we restrict our sample to those parties which are clearly identified with a left or right leaning political ideology. We again find that left-leaning incumbents are associated with a greater increase in investments during election years. This is consistent with the findings in Bertrand et al. (2006) who find that while political favors appear to extend across party lines in France, there is some evidence of a partisan effect on the left-wing of the political spectrum.

3.5.3 Politically Driven Investments and Election Outcomes

In Table 9, we restrict our sample to election years only and analyze whether election year project announcements by SOEs have a favorable impact on the outcome of elections for the incumbent. Specifically, we look at the number of electoral constituencies in a district in which the incumbent party won the elections and the margin of victory of the incumbent party in a district. To the extent that past election outcomes affect current election outcomes, we control for the margin of victory for the incumbent in the previous elections.

Columns 1 and 2 show that the number of projects announced by SOEs in an election year positively impacts both the the number of constituencies in which the incumbent party wins as well as the margin of victory. In particular, each additional project announced leads to 0.224 additional constituencies won (an average increase of 7.9%) and 0.9% gain in the margin of victory for the incumbent party. Thus, if we compare two districts associated with the same margin of victory for the incumbent during the previous election, election results will be more favorable for the incumbent in the district with higher current SOE investments. In unreported robustness tests, we find similar results for tests based on national elections.

In Panel B of Table 9, we examine whether the positive impact of SOE investments on election outcomes is especially greater in *Close* districts. Towards this end, we interact our key explanatory variable, the number of projects announced with *Close* dummy. We first note that the on average each additional project announced by SOEs in less contested districts is associated with 0.191 additional constituencies won (an average increase of 6.7%) and 0.9% gain in the margin of victory for the incumbent party. Focusing on the coefficient of the interaction term, we find that this effect is especially greater in close districts and the estimates are economically significant. A coefficient

estimate of 0.074 (0.002) implies that relative to less contested districts, a project in a close district is associated with 39% (22%)[33] differentially greater increase in the number of constituencies won (margin of victory). However, we interpret these estimates with caution as they are not statistically indistinguishable from zero presumably due to low statistical power.

Overall, these results confirm that politicians benefit from election year targeting of investments.

3.5.4 Nature of Election Year Investments

In this section, we analyze the channels through which election year project announcements may attract voters. There is plenty of anecdotal evidence to suggest that politicians announce infrastructure investment projects just prior to elections.[34] Thus here we seek to understand whether election year projects serve to address the needs of voters for better infrastructure and higher employment. First, using industry codes, we look specifically at infrastructure projects and examine if there is an association between election years and infrastructure announcements. Second, we use annual employment data across all manufacturing firms from the Indian census[35] and split industries into high employment growth (median or higher) and low employment growth (below median) each year.

The empirical specification in Table 10 is structured similar to our baseline specification (equation (1)) and is based on state elections. The dependent variables in columns 1 and 3 are the *Number of high employment growth industry projects* and *Number of infrastructure projects* announced in a district by state SOEs respectively. We find that the total number of projects announced by SOEs that are in high-employment growth industries and infrastructure industries are higher in election years. In unreported tests, we repeat these tests for projects announced by non-government firms and do not observe a similar effect. To ensure that what we observe is not just a mechanical effect,

[33] $\frac{0.074\times100}{0.191} \approx 39\%$ and $\frac{0.002\times100}{0.009} \approx 22\%$, where 0.191 and 0.002 are the baseline coefficient estimates (See Panel B of Table 9) in for uncontested districts.

[34] For instance, a few months preceding the 2014 elections, Indian Railways (Central SOE) announced a Rs.1,100 crore ($177 Million @ 62Rs/$) forged wheel factory in the home constituency of the ruling party (Congress) president (Sonia Gandhi) with estimated employment projects of 2500 jobs for local people. http://articles.economictimes.indiatimes.com/2013-10-03/news/42664604_1_wheel-factory-rail-coach-factory-wheel-plant

[35] We use data from the Annual Survey of Industries (ASI) which is an annual census of manufacturing firms in India. This data spans the period 2001-2009.

we repeat these tests with the ratio of total number of high employment growth industry projects (number of infrastructure industry projects) announced in a district in a given year to the total number of projects announced in a district in a year by state SOEs in column 2 (column 4) and obtain qualitatively similar results. In unreported tests we obtain qualitatively similar results for national elections. Collectively, these results suggest that politicians focus on announcing projects that seek to attract voters either by means of improvements in infrastructure or employment prospects.

3.6 Are Political Investments Costly? Market Reaction to Politically Motivated Investments

In this section, we examine the stock market reaction to project announcements to evaluate whether politically motivated investments enhance or destroy firm value. This necessitates switching our unit of analysis from the district-year level analysis in the previous sections to firm-project-year level. While we could have done the earlier analysis at the firm-level,[36] a unique aspect of our paper is the availability of granular data at the project level. Thus we know the exact location of each project which we can use that to test our conjecture on pork-barrel politics. For a firm-level treatment of our previous analyses we will have to make the assumption that election year investments made by a firm are primarily in the location of headquarters as in Julio and Yook (2012). However, in our sample for more than 75% of the firms, none of the projects announced are located in the same district as the headquarters. For the mean firm in our sample, only 16% of the projects announced are located in the headquarter location. Hence our baseline empirical setup at the district-year level allows us to analyze whether SOEs are likely to announce a greater number of investments in a politically sensitive district regardless of their actual headquarter location. Subsequently, in this section to examine whether such projects announced by SOEs are positive/negative NPV, we focus on the cumulative returns of the firms initiating the project around the date of the announcement.

[36] In unreported robustness tests, we repeat all our analysis at the firm level using three dependent variables - Investments/Total Assets defined as the gross investments scaled by beginning of the year total assets, #Projects defined as the total number of projects announced by a firm in a year as reported in our CAPEX dataset available from CMIE, and Log(Project Value) which is the natural log of the total value of all projects announced by a firm in a year as the dependent variable. We control for Tobins Q, cash flow , and state-level real GDP growth in these firm-level regressions. We find that SOEs increase their capital investments (both in terms of Investments/Total Assets and Log(Project Value) and announce greater number of projects during election years. We see no significant impact of political cycle on the investments of non-government firms.

To evaluate whether politically motivated investments destroy firm value, we focus on the projects announced by partially privatized central SOEs.[37] We use *Excess returns* and *Abnormal returns* around the day of the project announcement as a measure of the market's perception about these investments. If these investments are primarily driven by political factors without any regard to firm value, then we expect these project announcements to be associated with negative excess returns. Formally, our tests are based on the following difference-in-differences specification:

$$Y_{fp} = \alpha_0 + \beta_1 \times (\text{SOE}_f) + \beta_2 \times \text{Election/Close}_p + \beta_3 \times \text{Election/Close}_p \times (\text{SOE}_f) + \beta_4 \times X_f + \mu_{f,ind} + \varepsilon_{fp} \tag{5}$$

Where f refers to firm and p refers to project. The dependent variable is *Excess return* in panel A and *Abnormal return* in panel B in both tables. SOE_f is a dummy variable that identifies projects announced by SOEs. We expect β_3 to be negative if projects announced by SOEs in election years and closely contested districts are politically motivated and destroy firm value. Since these tests are at the firm-project level, we control for other firm-specific variables including *ROA*, *Debt/Assets*, *Size*, *Tobins' Q* and *Industry fixed effects* in all of these tests. Tables 11 and 12 report the estimates based on these tests.

In Table 11, the event window measured in days is -1 to +1, -3 to +3, and -15 to +15 in columns 1, 2, and 3 respectively. Column 1 shows that relative to non-government firms, 1 day announcement returns are on average 1.5% lower for projects announced by SOEs in election years compared to off-election years. Tests for the significance of sum of coefficients, $\beta_1 + \beta_3$, (not tabulated) shows that on average, announcement returns are 2.0% lower for projects announced by SOEs in election years and this effect is statistically significant at the 1% level. These results are even more stark when we examine announcement effects over a 3-day (column 2) and 15-day (column 3) event window around project announcement data suggesting that there may be some information leakage and consequently a negative stock reaction even prior to a formal announcement. To see if the negative stock price reaction is smoothened out over longer duration, we re-examine these results

[37] As of 2008, there were only 4 partially privatized state level SOEs that announced 20 projects during our sample period. We do not include these in our main analyses due to the small sample. However, in unreported robustness tests looking at announcement returns associated with projects of State SOEs, we find results consistent with our results on projects announced by listed Central SOEs. Election (off-election) year projects announced by state SOEs are associated with a -1.08% (+1.65%), although statistically insignificant, excess return over the day of the project announcement.

over a 1-year and 3-year event window around the project announcement date in columns 4 and 5 of Table 11. We find that SOE projects announced in election years districts are associated with negative announcement returns over the longer windows. Further, in Figure A2 of the manuscript, we trace the daily cumulative excess returns for election-year projects announced by SOEs and non-government over a 30-day period following announcement. The figure shows that the cumulative excess returns is negative and continues to fall over the 30-day period for projects announced by SOEs. In contrast election year projects of non-government are associated with positive cumulative returns that continue to rise over the 30-day period

In panel B, we repeat these tests with *Abnormal return* as the dependent variable and obtain consistent results. We obtain similar results when we differentiate between projects announced in closely contested districts and those announced in other districts in Table 12.[38] Specifically, compared to non-government firms, 1-day announcement returns are 1.5% lower for projects announced by SOEs in closely contested districts relative to projects announced in other districts. The results are qualitatively similar over longer horizon event windows.

In unreported tests, we do not observe a significant effect of the size of the government stake on sensitivity of firm investments to elections. This is likely because despite partial privatization, the government of India still retains majority stake in all these firms. Note that we classify a firm as SOE if the government of India has majority stake in the firm. The mean (median) value of government stake in a publicly listed SOE in our sample is 74.48% (75.63%).[39]

To summarize, our results from Tables 11 and 12 highlights the adverse costs of government control over investment decisions of corporate entities. Based on the estimates from these tests, we can provide a back of the envelope estimate of the loss in value to the firm by making additional assumptions. To be conservative, we assume that only the number of *additional investments* announced in election years relative to off-election years are politically motivated. The average in-

[38] In unreported tests, we also differentiate between projects announced in districts of left-leaning and right leaning incumbents. The negative reaction is especially greater for projects associated with left-leaning governments.

[39] We also examine the announcement returns around actual project implementation date and report the results in Tables A4 and A5. We find limited evidence of a negative market reaction to SOE projects around implementation date. While one day excess returns are negative and statistically significant, the estimates using abnormal returns and over longer horizon windows although negative are statistically indistinguishable from zero. These results are qualitatively similar for projects announced in closely contested (Close) districts. This suggests that most of the price impact is at the time of announcement rather than implementation.

crease in number of projects announced by Central SOEs in election years is 17% (see Section 3.2). This translates into approximately 21 additional projects announced in election years. Therefore, the average loss in market value of firms announcing a project in election years can be calculated as:

Cost= Number of Politically motivated investments(=21) × Average Market Value loss (=-1.5% to -8.0%) × Average Market Cap on day of announcement

The estimated dead-weight costs of politically motivated investments in India ranges anywhere between $2.4 billion to $13 billion for the last three elections (1999, 2004, and 2009) assuming a -1.5% stock price reaction and between $13 billion to $69 billion assuming a -8.0% stock price reaction. These measures are only a lower bound for the true cost of political influence because of the following reasons: First, our measures are based on the assumption that only the additional number of projects announced by SOEs (only 21 out of on average of 143 projects announced) in election years are costly. However, even non-additional projects announced in election years may be politically influenced. Similarly, our tests on announcement returns estimate the difference between market reactions to project announced by SOEs in election years vs off-election years. To the extent that there are politically motivated (-ve NPV) projects announced projects even in off-election years, and non politically motivated (+ve NPV) projects announced in election years, our estimates are biased downwards. Second, there could be other channels through which politicians influence SOE hiring and firing decisions, procurement contracts etc. which we don't focus on.

4 Conclusion

We examine the role of political influence on investments decisions of state owned enterprises by exploiting the timing of elections in India as a source of exogenous variation in politicians' incentives to attract voters. Using a unique project level dataset of capital investments over a fifteen year period, we compare investment behavior of both SOEs and non-government firms in different districts of India across election and off-election years. We document compelling evidence of a political investment cycle in the corporate investment decisions of state owned firms. Controlling for district and year fixed effects, there is a 17%-28% increase in the number of projects announced

by government firms (depending on whether they are central SOEs or state SOEs) during election years. We do not find a similar pattern for investment announcements by non-government firms. Further, these effects are particularly stronger for districts in which the previous election was closely contested.

The project level data also allows us to gauge the value of these investments by examining the announcement returns. Consistent with SOEs foregoing value maximization to favor their political masters, we find that markets react negatively to projects announced by partially privatized SOEs in election years and located in politically competitive districts. A back of the envelope calculation reveals the per election costs of such politically motivated investment distortions to be as a high as $13 billion in terms of market capitalization.

Overall, our results support the political view of government ownership. We show clear micro evidence of distortions in the investment behavior of state owned enterprises due to political reasons. Our findings have implications for the policy debate on the efficiency of state capitalism in emerging markets.

References

Alesina, A. and Sachs, J. (1988). Political parties and the business cycle in the united states, 1948 1984. *Journal of Money, Credit, and Banking*, 20(1):63–82.

Atkinson, A. B. and Stiglitz, J. E. (1980). *Lectures on Public Economics*. Mcgraw-Hill College.

Baker, S. R., Bloom, N., and Davis, S. J. (2016). Measuring economic policy uncertainty. *The Quarterly Journal of Economics*, 131(4):1593–1636.

Bartel, A. P. and Harrison, A. E. (2005). Ownership versus environment: Disentangling the sources of public-sector inefficiency. *Review of Economics and Statistics*, 87(1):135–147.

Bernhard, W. and Leblang, D. (2006). *Democratic processes and financial markets: Pricing politics*. Cambridge University Press.

Bertrand, M., Kramarz, F., Schoar, A., and Thesmar, D. (2006). Politicians, firms and the political business cycle: evidence from france. *Unpublished working paper. University of Chicago*.

Białkowski, J., Gottschalk, K., and Wisniewski, T. P. (2008). Stock market volatility around national elections. *Journal of Banking & Finance*, 32(9):1941–1953.

Borisova, G., Fotak, V., Holland, K., and Megginson, W. L. (2015). Government ownership and the cost of debt: Evidence from government investments in publicly traded firms. *Journal of Financial Economics*, 118(1):168–191.

Bortolotti, B., Fotak, V., and Megginson, W. L. (2015a). The sovereign wealth fund discount: Evidence from public equity investments. *The Review of Financial Studies*, 28(11):2993.

Bortolotti, B., Fotak, V., and Megginson, W. L. B. (2015b). The rise of sovereign wealth funds: definition, organization, and governance. In *Public Private Partnerships for Infrastructure and Business Development*, pages 295–318. Springer.

Boubakri, N. and Cosset, J.-C. (1998). The financial and operating performance of newly privatized firms: Evidence from developing countries. *The Journal of Finance*, 53(3):1081–1110.

Boutchkova, M., Doshi, H., Durnev, A., and Molchanov, A. (2012). Precarious politics and return volatility. *The Review of Financial Studies*, 25(4).

Boycko, M., Shleifer, A., and Vishny, R. (1995). *Privatizing russia*. Cambridge: MIT press.

Boycko, M., Shleifer, A., Vishny, R. W., Fischer, S., and Sachs, J. D. (1993). Privatizing russia. *Brookings Papers on Economic Activity*, 1993(2):139–192.

Brender, A. and Drazen, A. (2005). Political budget cycles in new versus established democracies. *Journal of Monetary Economics*, 52(7):1271 – 1295.

Carvalho, D. (2014). The real effects of government-owned banks: Evidence from an emerging market. *The Journal of Finance*, 69(2):577–609.

Chen, S., Sun, Z., Tang, S., and Wu, D. (2011). Government intervention and investment efficiency: Evidence from china. *Journal of Corporate Finance*, 17(2):259–271.

Christiansen, H. (2011). The size and composition of the soe sector in oecd countries. Technical report, OECD Publishing.

Cohen, L., Coval, J., and Malloy, C. (2011). Do powerful politicians cause corporate downsizing? *Journal of Political Economy*, 119(6):1015–1060.

Cole, S. (2009). Fixing market failures or fixing elections? agricultural credit in india. *American Economic Journal: Applied Economics*, 1(1):219 – 250.

Cox, G. W. and McCubbins, M. D. (1986). Electoral politics as a redistributive game. *The Journal of Politics*, 48(2):370–389.

Dewenter, K. L. and Malatesta, P. H. (1997). Public offerings of state-owned and privately-owned enterprises: an international comparison. *The Journal of Finance*, 52(4):1659–1679.

Dewenter, K. L. and Malatesta, P. H. (2001). State-owned and privately owned firms: An empirical analysis of profitability, leverage, and labor intensity. *The American Economic Review*, 91(1):320–334.

Dinc, I. S. (2005). Politicians and banks: Political influences on government-owned banks in emerging markets. *Journal of Financial Economics*, 77(2):453 – 479.

Dinc, I. S. and Gupta, N. (2011). The decision to privatize: Finance and politics. *The Journal of Finance*, 66(1):241–269.

Dixit, A. (1997). Power of incentives in private versus public organizations. *The American Economic Review*, 87(2):378–382.

Dixit, A. and Londregan, J. (1996). The determinants of success of special interests in redistributive politics. *The Journal of Politics*, 58(4):pp. 1132–1155.

Drazen, A. (2001). The political business cycle after 25 years. *NBER Chapters*, pages 75–138.

Durnev, A. (2012). The real effects of political uncertainty: Elections and investment sensitivity to stock prices. *Working paper*.

Fan, J. P., Wong, T. J., and Zhang, T. (2007). Politically connected ceos, corporate governance, and post-ipo performance of china's newly partially privatized firms. *Journal of financial economics*, 84(2):330–357.

Foerster, S. R. and Schmitz, J. J. (1997). The transmission of us election cycles to international stock returns. *Journal of International Business Studies*, pages 1–27.

Funkhouser, R. and MacAvoy, P. W. (1979). A sample of observations on comparative prices in public and private enterprises. *Journal of Public Economics*, 11(3):353–368.

Groves, T., Hong, Y., McMillan, J., and Naughton, B. (1994). Autonomy and incentives in chinese state enterprises. *The Quarterly Journal of Economics*, 109(1):183–209.

Gulen, H. and Ion, M. (2016). Policy uncertainty and corporate investment. *Review of Financial Studies*, 29(3):523–564.

Julio, B. and Yook, Y. (2012). Political uncertainty and corporate investment cycles. *The Journal of Finance*, 67(1):45–84.

Karolyi, G. A. and Liao, R. C. (2017). State capitalism's global reach: Evidence from foreign acquisitions by state-owned companies. *Journal of Corporate Finance*, 42:367 – 391.

Khemani, S. (2004). Political cycles in a developing economy: effect of elections in the indian states. *Journal of development Economics*, 73(1):125–154.

Khwaja, A. I. and Mian, A. (2005). Do lenders favor politically connected firms? rent provision in an emerging financial market. *The Quarterly Journal of Economics*, 120(4):1371–1411.

Kikeri, S., Nellis, J., and Shirley, M. (1994). Privatization: Lessons from market economies. *The World Bank Research Observer*, 9(2):241–272.

Knight, B. (2006). Are policy platforms capitalized into equity prices? evidence from the bush/gore 2000 presidential election. *Journal of Public Economics*, 90(4):751–773.

Knill, A. M., Lee, B. S., and Mauck, N. (2012). Sovereign wealth fund investment and the return-to-risk performance of target firms. *Journal of Financial Intermediation*, 21(2):315–340.

Kole, S. R. and Mulherin, J. H. (1997). The government as a shareholder: a case from the united states. *The Journal of Law and Economics*, 40(1):1–22.

Kowalski, P., Büge, M., Sztajerowska, M., and Egeland, M. (2013). State-owned enterprises: Trade effects and policy implications. Technical report, OECD Publishing.

Laffont, J.-J. and Tirole, J. (1991). The politics of government decision-making: A theory of regulatory capture. *The Quarterly Journal of Economics*, 106(4):1089–1127.

Lindbeck, A. and Weibull, J. (1987). Balanced-budget redistribution as the outcome of political competition. *Public choice*, 52(3):273–297.

López de Silanes, F., La Porta, R., and Shleifer, A. (1999). Corporate ownership around the world. *Journal of finance*, 54(2):471–517.

Megginson, W. L., Nash, R. C., and Randenborgh, M. (1994). The financial and operating performance of newly privatized firms: An international empirical analysis. *The Journal of Finance*, 49(2):403–452.

Mian, A., Sufi, A., and Trebbi, F. (2010). The political economy of the us mortgage default crisis. *American Economic Review*, 100(5):1967–98.

Musacchio, A. and Lazzarini, S. G. (2012). Leviathan in business: varieties of state capitalism and their implications for economic performance. *Working paper*.

Netter, J. and Megginson, W. (2001). From state to market: A survey of empirical studies on privatization. *Journal of economic literature*, 39(2).

Nordhaus, W. D. (1975). The political business cycle. *The Review of Economic Studies*, 42(2):pp. 169–190.

Pan, Y., Wang, T. Y., and Weisbach, M. S. (2016). Ceo investment cycles. *The Review of Financial Studies*, 29(11):2955–2999.

Pastor, L. and Veronesi, P. (2012). Uncertainty about government policy and stock prices. *The Journal of Finance*, 67(4):1219–1264.

Rogoff, K. (1990). Equilibrium political budget cycles. *The American Economic Review*, 80(1):pp. 21–36.

Santa-Clara, P. and Valkanov, R. (2003). The presidential puzzle: Political cycles and the stock market. *The Journal of Finance*, 58(5):1841–1872.

Sapienza, P. (2004). The effects of government ownership on bank lending. *Journal of Financial Economics*, 72(2):357–384.

Sappington, D. E. and Stiglitz, J. E. (1987). Privatization, information and incentives. *Journal of policy analysis and management*, 6(4):567–585.

Shleifer, A. (1998). State versus private ownership. *The Journal of Economic Perspectives*, 12(4):pp. 133–150.

Shleifer, A. and Vishny, R. W. (1994). Politicians and firms. *The Quarterly Journal of Economics*, 109(4):pp. 995–1025.

Snowberg, E., Wolfers, J., and Zitzewitz, E. (2007). Partisan impacts on the economy: evidence from prediction markets and close elections. *The Quarterly Journal of Economics*, 122(2):807–829.

Stiglitz, J. E. (1989). *The economic role of the state*. Oxford: B. Blackwell.

Stiglitz, J. E. (1994). *Whither Socialism?* Cambridge: MIT press.

Stock, J. H. and Yogo, M. (2005). Testing for weak instruments in linear iv regression. *Identification and Inference for Econometric Models: Essays in Honor of Thomas Rothenberg*, page 80.

Tirole, J. (1994). The internal organization of government. *Oxford economic papers*, pages 1–29.

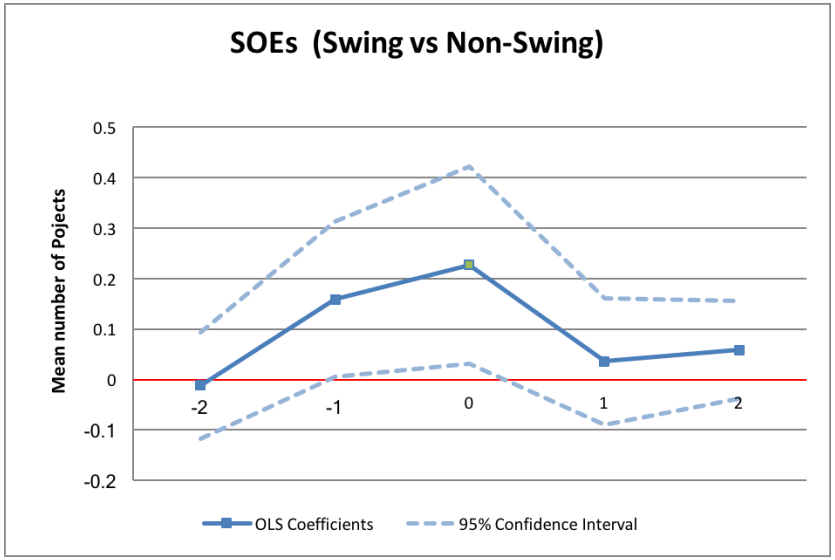


Figure 1.1

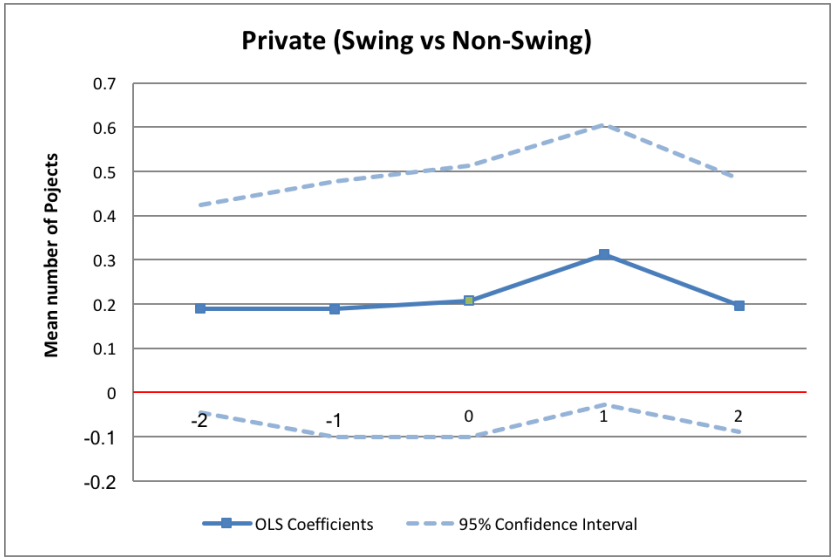


Figure 1.2

Figure 1: This figure traces the the difference between the mean number of projects announced by state SOEs (Figure 1.1) non-government enterprises (Figure 1.2) in closely contested and other districts over the state election cycle. The point estimates are sum of coefficients $\eta_n + Close$ from the following panel regression specification:

$$Y_{ijt} = \alpha_0 + \sum_{1}^{4} \eta_n \times Close_{ijt} \times Sc_{-njt} + \phi \times Close_{ijt} + \sum_{1}^{4} \beta_n \times Sc_{-njt} + \gamma \times C_{it} + \mu_j$$

where i denotes state, j denotes district and t denotes year. Dotted lines denote the 95% confidence interval. We control for *district* and *year fixed effects* in these tests and standard errors are clustered at district level.

Table 1: **Summary Statistics**

This table reports the summary statistics of the key variables used in our analysis. Panel A reports the summary statistics for the data on national elections. Panel B reports data on the same variables but for state elections. The data covers the period 1995-2009 and is collected from Election commission of India. The unit of observation is a district-year. There are 435 (594) unique districts for national (state) elections. All variables are defined in detail in Appendix A.

Panel A: National Elections				
Variables	N	Mean	Median	Std. Dev.
		Political Variables		
Election year	5081	0.279	0	0.448
Absolute Margin	5081	0.144	0.104	0.131
Close	5081	0.272	0	0.445
Majority	5081	0.250	0	0.434
		Number of projects		
Central SOEs	5081	0.283	0	0.829
Non-govt Firms	5081	1.864	0	6.55
All	5081	2.896	1	9.928
		Announced dummy		
Central SOEs	5081	0.168	0	0.374
Non-govt Firms	5081	0.389	0	0.487
All	5081	0.503	1	0.500
Panel B: State Elections				
		Political Variables		
Election year	8456	0.209	0	0.407
Scheduled	8456	0.176	0	0.381
Absolute Margin	8456	0.092	0.075	0.079
Close	8456	0.373	0	0.483
Majority	8456	0.251	0	0.434
		Number of projects		
State SOEs	8456	0.396	0	1.41
Non-govt Firms	8456	1.47	0	5.67
All	8456	2.328	0	7.975
		Announced dummy		
State SOEs	8456	0.19	0	0.393
Non-govt Firms	8456	0.323	0	0.467
All	8456	0.429	0	0.495

Table 2: **Summary Statistics (Project Characteristics)**
This table reports summary statistics pertaining to the characteristics of projects announced by SOEs and Non-government firms. In panel A, we compare the characteristics of projects announced by SOEs and Non-government firms. In panel B, we compare the characteristics of projects announced by SOEs and non-government firms during election and off-election years. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

Panel A: SOE VS Non-Government

	SOE	Non-Government	Difference
	(1)	(2)	(3)
Type of Projects			
Years to Completion	3.68	2.02	1.66***
Years to Implementation	1.64	0.94	0.70***
Expansion/New Unit	0.91	0.99	-0.08***
Log(Project Size)	3.89	4.12	-0.23***
Infrastructure	0.63	0.22	0.41***
Stalled/Abandoned	0.07	0.11	-0.04***
Stalled/Abandoned & Potential Dummies	0.09	0.12	-0.03***
N	5568	13413	

Panel B: Election VS Off-Election Years

	SOE			Non-Government		
	Election	Off-Election	Difference	Election	Off-Election	Difference
	(1)	(2)	(3)	(4)	(5)	(6)
Type of Projects						
Years to Completion	3.07	3.08	-0.01	1.86	1.87	-0.01
Years to Implementation	1.65	1.65	0.99	0.80	1.00	-0.20***
Expansion/New Unit	0.92	0.89	0.03**	0.98	0.99	-0.01***
Log(Project Size)	4.01	3.84	0.17***	3.88	4.24	-0.36***
Infrastructure	0.67	0.61	0.06***	0.18	0.23	-0.05***
Stalled/Abandoned	0.07	0.07	0.00	0.12	0.11	0.01
Stalled/Abandoned & Potential Dummies	0.11	0.08	0.03***	0.12	0.11	0.01**
N	1214	4354		2743	10670	

Table 3: **Elections and Corporate Investments**

This table reports estimates from the following panel regression model:

$$Y_{ijt} = \alpha_0 + \beta_1 \times Election_{it} + \gamma \times C_{it} + \mu_j + \varepsilon_{ijt}$$

Where i refers to state, j refers to district and t refers to year. Y is *Number of projects* announced in a district by Central SOEs and Non-govt firms in Columns (1) and (2) respectively and a dummy variable that identifies district-years in which at least one project was announced in columns (4) and (5). The dependent variable in Column (3) is the percentage of projects announced by Central SOEs in a district. The dependent variable in Column (6) is *Project Value Ratio*, the ratio of total costs of investments by Central SOEs to total costs of investments by both Central SOEs and non-government firms. *Election* is a dummy variable that identifies election years. All variables are defined in detail in Appendix A. Panel A reports results for National elections. The data covers the period 1995-2009. The election data is from Election commission of India and data on new project announcements was obtained from CAPEX, a database of new projects announced in India. We control for *district fixed effects* in these tests. The standard errors are robust to heteroscedasticity and clustered at the district level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

Panel A: National Elections

	Number of projects		Percentage	Announced dummy		Value Ratio
	Central SOEs	Non-govt Firms	$\frac{\text{Central}}{\text{Total}}$	Central SOEs	Non-govt Firm	$\frac{\text{Central Value}}{\text{Total Value}}$
	(1)	(2)	(3)	(4)	(5)	(6)
Election	.048***	-.109	.016**	.022**	.014	.015*
	(.018)	(.072)	(.007)	(.010)	(.011)	(.008)
State level real gdp growth	.337**	6.229***	-.006	.117	.695***	-.010
	(.136)	(.957)	(.054)	(.074)	(.105)	(.065)
Constant	.257***	1.619***	.074***	.158***	.354***	.082***
	(.009)	(.042)	(.003)	(.004)	(.006)	(.004)
Observations	5039	5039	5039	5039	5039	4061
R^2	.480	.552	.185	.312	.442	.193

Table 3: **Elections and Corporate Investments (Continued...)**
Panel B reports the results for our tests based on state elections.The tests are based on the following IV specification:

$$Y_{ijt} = \alpha_0 + \beta_1 \times Election_{it} + \gamma \times C_{it} + \mu_j + \mu_t + \varepsilon_{ijt}$$

Where i refers to state, j refers to district and t refers to year. *Scheduled* is used as an instrument for *Elections*. *Election* is a dummy variable that identifies election years. *Scheduled* is a dummy variable that takes the value 1 if 5 years have passed since the previous election. Y is *Number of projects* announced in a district by State SOEs and Non-govt firms in Columns (1) and (2) respectively and a dummy variable that identifies district-years in which at least one project was announced in columns (4) and (5). The dependent variable in Column (3) is the percentage of projects announced by State SOEs in a district. The dependent variable in Column (6) is *Project Value Ratio*, the ratio of total costs of investments by State SOEs to total costs of investments by both State SOEs and non-government firms. All variables are defined in detail in Appendix A. The coefficient on *Scheduled* in the first stage of instrumental variable regression (not reported here for brevity) is 0.95 (standard error 0.005) with an R^2 of 0.80. The data covers the period 1995-2009. The election data is from Election commission of India and data on new project announcements was obtained from CAPEX, a database of new projects announced in India. We control for *district* and *year fixed effects* in these tests. The standard errors are robust to heteroscedasticity and clustered at the district level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

Panel B: State elections (OLS)

	Number Of Projects		Percentage	Announced dummy		Value Ratio
	State SOEs	Non-govt Firms	$\frac{\text{State}}{\text{Total}}$	State SOEs	Non-govt Firms	$\frac{\text{State Value}}{\text{Total Value}}$
	(1)	(2)	(3)	(4)	(5)	(6)
Election	.106**	-.086	.032***	.029***	-.012	.031***
	(.046)	(.053)	(.007)	(.009)	(.009)	(.008)
State level real gdp growth	-.806***	.334	-.202***	-.267***	.100	-.167***
	(.172)	(.297)	(.049)	(.062)	(.078)	(.057)
Constant	.015	.088	.021***	.025**	.116***	.012
	(.041)	(.108)	(.008)	(.011)	(.015)	(.008)
Observations	8412	8412	8412	8412	8412	7017
R^2	.315	.622	.192	.324	.511	0.178

Panel C: State elections (IV)

Election	.109**	.038	.029***	.025***	-.012	.030***
	(.054)	(.058)	(.008)	(.010)	(.010)	(.008)
State level real gdp growth	-.807***	.328	-.202***	-.267***	.100	-.167***
	(.172)	(.297)	(.049)	(.062)	(.077)	(.055)
Constant	-.389***	-1.191***	-.084***	-.166***	-.205***	-.064***
	(.045)	(.111)	(.008)	(.011)	(.015)	(.008)
Observations	8412	8412	8412	8412	8412	7017
R^2	.315	.622	.192	.324	.511	0.178

Table 4: **Political Competition, Patronage and Corporate Investments**

This table reports estimates based on the sample of state elections and are from the following panel regression model:

$$Y_{ijt} = \alpha_0 + \beta_1 \times Election_{it} + \beta_2 \times Close\backslash Majority_{ijt} + \beta_3 \times Election_{it} \times Close\backslash Majority_{ijt} + \gamma \times C_{it} + \mu_j + \mu_t + \varepsilon_{ijt}$$

Where i refers to state, j refers to district and t refers to year. Y is *Number of projects* announced in a district by State SOEs in Columns (1) and (4) Non-govt firms in Column (2) and (5). The dependent variable in Columns (3) and (6) is the percentage of projects announced by State SOEs in a district. *Close* is a dummy variable that takes the value 1 for districts if the Incumbent party's Margin of victory or loss is less than 5% and 0 otherwise. *Majority* is a dummy variable that takes the value 1 for districts in which the Margin of victory for the Incumbent Party was above the 75th percentile. All variables are defined in detail in Appendix A. Panel A reports results for National elections. The data covers the period 1995-2009. The election data is from Election commission of India and data on new project announcements was obtained from CAPEX, a database of new projects announced in India. We control for *district* and *year fixed effects* in these tests. The standard errors are robust to heteroscedasticity and clustered at the district level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

State Elections

	Close				Majority			
	Number of projects		Percentage	Value Ratio	Number of projects		Percentage	Value Ratio
	State SOEs	Non-govt Firms	$\frac{\text{State}}{\text{Total}}$	$\frac{\text{State Value}}{\text{Total Value}}$	State SOEs	Non-govt Firms	$\frac{\text{State}}{\text{Total}}$	$\frac{\text{State Value}}{\text{Total Value}}$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Election	0.010	-0.090	0.020**	0.016*	0.139**	-0.039	0.037***	0.039***
	(0.031)	(0.074)	(0.009)	(0.010)	(0.065)	(0.066)	(0.008)	(0.009)
Close	0.010	0.078	-0.014*	-0.015*				
	(0.040)	(0.102)	(0.008)	(0.008)				
Election X Close	0.203**	0.014	0.026*	0.029**				
	(0.095)	(0.116)	(0.014)	(0.014)				
Majority					-0.141**	-0.265*	-0.005	-0.003
					(0.059)	(0.136)	(0.009)	(0.010)
Election X Majority					-0.105	-0.142	-0.015	-0.033*
					(0.085)	(0.145)	(0.015)	(0.017)
State level real gdp growth	-0.805***	0.315	-0.198***	-0.163***	-0.814***	0.315	-0.201***	-0.166***
	(0.174)	(0.299)	(0.049)	(0.057)	(0.173)	(0.301)	(0.049)	(0.055)
Constant	0.016	0.056	0.027***	0.019*	0.061*	0.173*	0.023***	0.013
	(0.046)	(0.124)	(0.008)	(0.012)	(0.036)	(0.102)	(0.008)	(0.008)
Observations	8412	8412	7017	8412	8412	8412	8412	7017
R^2	0.316	0.622	0.192	0.179	0.316	0.623	0.192	0.179

Table 5: **State Elections and Corporate Investment cycle**
This table reports the estimates from the following specification

$$Y_{ijt} = \alpha_0 + \beta_1 \times Sc_{-1jt} + \beta_2 \times Sc_{-2jt} + \beta_3 \times Sc_{-3jt} + \beta_4 \times Sc_{-4jt} + \gamma \times C_{it} + \mu_j + \mu_t + \varepsilon_{ijt}$$

Where i refers to state, j refers to district and t refers to year. Y is *Number of projects* announced in a district by State SOEs, and Non-govt firms in Columns (1), and (2) respectively. The dependent variable in Column (3) is the percentage of projects announced by State SOEs in a district. Sc_{-n} is a dummy variable that takes the value 1 for n (5-n) years before (after) the next (previous) scheduled election. Note that the suppressed dummy variable in these tests is *election year*. All variables are defined in detail in Appendix A. So the coefficient on Sc_{-n}, $\beta_n = E[Y|Sc_{-n} = 1, X] - E[Y|election = 1, X]$. The data covers the period 1995-2009. The election data is from Election commission of India and data on new project announcements was obtained from CAPEX, a database of new projects announced in India. We control for *district* and *year fixed effects* in these tests. The standard errors are robust to heteroscedasticity and clustered at the district level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

	Number of projects		Percentage
	State SOEs	Non-govt Firms	$\frac{State}{Total}$
	(1)	(2)	(3)
1 year after election	-.203***	-.052	-.046***
	(.064)	(.062)	(.009)
2 years after election	-.087*	.202***	-.021***
	(.052)	(.073)	(.008)
2 years before election	-.138***	-.078	-.029***
	(.051)	(.061)	(.009)
1 year before election	-.085**	-.030	-.021**
	(.037)	(.076)	(.009)
State level real gdp growth	-.778***	.354	-.193***
	(.171)	(.301)	(.049)
Constant	.116***	-.003	.047***
	(.027)	(.128)	(.009)
Observations	8412	8412	8412
R^2	.316	.622	.193

Table 6: **State Elections, Political Competition, and Corporate Investment Cycle** This table reports the inter-temporal dynamics of investments in closely contested districts. Formally, the table reports estimates from the following specification.

$$Y_{ijt} = \alpha_0 + \sum_{1}^{4} \eta_n \times Close_{ijt} \times Sc_{-njt} + \phi \times Close_{ijt} + \sum_{1}^{4} \beta_n \times Sc_{-njt} + \gamma \times C_{it} + \mu_j + \mu_t + \varepsilon_{ijt}$$

Where i refers to state, j refers to district and t refers to year. Y is *Number of projects* announced in a district by state SOEs and Non-govt firms in Columns (1) and (2) respectively. The dependent variable in Column (3) is the percentage of projects announced by State SOEs in a district. Sc_{-n} is a dummy variable that takes the value 1 for n (5-n) years before (after) the next (previous) scheduled election. *Close* is a dummy variable that takes the value 1 for districts if the Incumbent party's Margin of victory or loss is less than 5% and 0 otherwise. All variables are defined in detail in Appendix A. The data covers the period 1995-2009. The election data is from Election commission of India and data on new project announcements was obtained from CAPEX, a database of new projects announced in India. We control for *district* and *year fixed effects* in these tests. The standard errors are robust to heteroscedasticity and clustered at the district level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

	Number of projects		Percentage
	State SOEs	Non-govt Firms	$\frac{State}{Total}$
	(1)	(2)	(3)
1 year after X Close	-.190*	.106	-.053***
	(.100)	(.171)	(.018)
2 years after X Close	-.167*	-.009	-.027
	(.099)	(.151)	(.017)
2 years before X Close	-.238**	-.017	-.054***
	(.097)	(.131)	(.019)
1 years before X Close	-.067	-.018	-.014
	(.075)	(.150)	(.017)
Close	.226**	.206	.026*
	(.099)	(.157)	(.014)
State level real gdp growth	-.773***	.281	-.183***
	(.172)	(.308)	(.049)
Constant	-.008	-.106	.031***
	(.061)	(.165)	(.012)
Observations	8412	8412	8412
R^2	.318	.623	.194

Table 7: **Policy Uncertainty and Corporate Investments using CAPEX Project Announcements**

The tests are based on the following panel regression model:

$$Y_{ijt+L} = \alpha_0 + \beta_1 \times \text{Log(Policy Uncertainty)}_t + \gamma \times C_{it} + \mu_j + \varepsilon_{ijt}$$

Where i refers to state, j refers to district and t refers to year. Y is *Number of projects* announced in a district by Central SOEs and Non-govt firms in Columns 1-4 and 5-9 respectively. Policy Uncertainty index is obtained from Baker et al. (2016) and measures the average policy uncertainty in a year. L denotes the leading period and takes the value 0-3. The data covers the period 2003-2009. Data on new project announcements was obtained from CAPEX, a database of new projects announced in India. All variables are defined in detail in Appendix A. We control for *district fixed effects* in these tests. The standard errors are robust to heteroscedasticity and clustered at the district level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

	Central SOEs				Non-govt Firms			
	L=0	L=1	L=2	L=3	L=0	L=1	L=2	L=3
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Policy Uncertainty	-0.035	-0.011	-0.062	-0.084	-0.598***	-4.815***	-0.575	0.595
	(0.040)	(0.094)	(0.107)	(0.099)	(0.169)	(0.718)	(0.723)	(0.551)
State level real gdp growth	0.604**	-0.249	-0.306	0.715***	5.922***	-0.275	0.090	3.225*
	(0.250)	(0.295)	(0.327)	(0.273)	(1.262)	(1.196)	(1.584)	(1.732)
Constant	0.465***	0.428	0.603	0.659	5.045***	23.069***	5.743*	1.071
	(0.167)	(0.387)	(0.440)	(0.409)	(0.702)	(2.966)	(2.999)	(2.260)
Observations	2592	2179	1765	1384	2592	2179	1765	1384
R^2	0.497	0.513	0.530	0.560	0.730	0.783	0.789	0.824

Table 8: **Political Authority and Corporate Investments**
This table reports estimates from the following panel regression model:

$$Y_{ijt} = \alpha_0 + \eta Election_{it} + \phi Federal_{ijt} + \beta_1 Election_{it} \times Federal_{ijt} + \gamma \times C_{it} + \mu_j + \varepsilon_{ijt}$$

Where i refers to state, j refers to district and t refers to year.Y is *Number of projects* announced in a district by Central SOEs in Columns (1) and Non-govt firms in Column (2). The dependent variable in Columns (3) is the percentage of projects announced by Central SOEs in a district. These tests are only for National elections. *Federal Minister* is a dummy variable identifies district-years where the Member of Parliament is also a federal minister. All variables are defined in detail in Appendix A. The data covers the period 1995-2009. The election data is from Election commission of India and data on new project announcements was obtained from CAPEX, a database of new projects announced in India. We control for *district fixed effects* in these tests. The standard errors are robust to heteroscedasticity and clustered at the district level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

	Number of projects		Percentage
	State SOEs	Non-govt Firms	$\frac{State}{Total}$
	(1)	(2)	(3)
Election	0.049***	-0.113	0.017**
	(0.018)	(0.076)	(0.007)
Federal Minister	0.122**	-0.311	0.046***
	(0.047)	(0.788)	(0.014)
Election X Federal minister	0.109	0.272	0.028
	(0.086)	(0.387)	(0.023)
State level real gdp growth	0.339**	6.205***	-0.005
	(0.136)	(0.962)	(0.053)
Constant	0.242***	1.661***	0.069***
	(0.011)	(0.124)	(0.004)
Observations	5039	5039	5039
R^2	0.482	0.552	0.188

Table 9: **Politically Driven Investments and State Election Outcomes**
This table reports estimates from the following panel regression model:

$$Y_{ijt} = \alpha_0 + \beta_1 \times Numpojs_{ijt} + \gamma \times C_{it} + \mu_j + +\mu_t + \varepsilon_{ijt}$$

Where i refers to state, j refers to district and t refers to year. Y is *Constituencies won*: the number of constituencies in a district where the winner belonged to the incumbents party during the current elections in (Columns (1) and (3)). The dependent variable in Columns (2) and (4) is the *Margin of Victory*: the difference in share of votes received by incumbent and opposition parties in a district in the current election. *Numpojs* is *Number of projects* announced in a district by State SOEs (Columns (1) and (2)) and Non-govt firms (Columns (3) and (4)) during the election year. Panel A reports the results for the overall sample. In Panels B, and C, we re-estimate the above equation with the sub-sample of Close districts and all other districts respectively. All variables are defined in detail in Appendix A. These tests are based on State elections. The election data is from Election commission of India and data on new project announcements was obtained from CAPEX, a database of new projects announced in India. We control for *district* and *year fixed effects* in these tests. in these tests. The standard errors are robust to heteroscedasticity and clustered at the district level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

Panel A

	Constituencies Won	Margin of Victory	Constituencies Won	Margin of Victory
	(1)	(2)	(3)	(4)
Number of Projects Announced (SOE)	0.224***	0.009***		
	(0.051)	(0.003)		
Number of Projects Announced (Non-govt)			0.019	0.002
			(0.014)	(0.001)
Lagged Margin of victory or loss	2.305***	0.087	2.348***	0.144*
	(0.654)	(0.055)	(0.654)	(0.079)
Constant	1.784***	-0.106***	1.790***	-0.130***
	(0.303)	(0.006)	(0.303)	(0.023)
Observations	1747	1747	1747	1747
R^2	0.696	0.393	0.696	0.516

Panel B

Number of Projects Announced (SOE)	0.191***	0.009**		
	(0.048)	(0.004)		
Number of Projects Announced (Non-govt)			0.015	0.002
			(0.015)	(0.002)
Close	-0.300*	-0.018	-0.277	-0.025**
	(0.162)	(0.014)	(0.189)	(0.012)
Number of Projects Announced (SOE) X Close	0.074	0.002		
	(0.056)	(0.005)		
Number of Projects Announced (Non-govt) X Close			0.010	0.001
			(0.033)	(0.001)
Lagged Margin of victory or loss	1.946***	0.062	1.957**	0.108
	(0.698)	(0.059)	(0.844)	(0.106)
Constant	1.907***	-0.098***	1.907***	-0.119***
	(0.255)	(0.009)	(0.399)	(0.030)
Observations	1747	1747	1747	1747
R^2	0.697	0.393	0.697	0.518

Table 10: **State Elections and Politically Driven Investments: What is the channel?**
This table reports estimates from the following panel regression model:

$$Y_{ijt} = \alpha_0 + \beta_1 \times Election_{it} + \gamma \times C_{it} + \mu_j + \mu_t + \varepsilon_{ijt}$$

Where i refers to state, j refers to district and t refers to year. Y is *Number of high employment growth industry projects* and *Number of infrastructure projects* announced in a district by State SOEs in Columns (1) and (3) respectively. The dependent variable in Column (2) (Column (4)) is the ratio of total number of high employment growth industry projects (number of infrastructure industry projects) announced in a district in a given year to the total number of projects announced in a district in a year by State SOEs. *Election* is a dummy variable that identifies election years. The data spans the period 2001-2009 (1995-2009) in columns (1) and (2) (Columns (3) and (4)). The election data is from Election commission of India and data on new project announcements was obtained from CAPEX, a database of new projects announced in India. We control for *district* and *year fixed effects* in these tests. The standard errors are robust to heteroscedasticity and clustered at the district level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

Dependent variable	High Employment Growth Industry		Infrastructure Industry	
	#Projects	$\frac{\#\text{Employment}}{\#\text{Total}}$	#Projects	$\frac{\#\text{Infrastructure}}{\#\text{Total}}$
	(1)	(2)	(3)	(4)
Election	0.038**	0.001	0.086**	0.019**
	(0.019)	(0.005)	(0.008)	(0.008)
State level real gdp growth	-0.002	-0.091*	-0.521***	-0.148***
	(0.169)	(0.055)	(0.143)	(0.054)
Constant	-0.007	-0.001	-0.000	0.010
	(0.024)	(0.004)	(0.035)	(0.007)
Observations	5150	5150	8412	8412
R^2	0.158	0.137	0.278	0.235

Table 11: **Announcement Returns of Election Year SOE Investments**

This table presents results from our multivariate tests on announcement returns of politically driven investments. The estimates are based on the following specification:

$$Y_{fpt} = \alpha_0 + \beta_1 \times (\text{SOE}_f) + \beta_2 \times \text{Election}_{pt} + \beta_3 \times \text{Election}_{pt} \times (\text{SOE}_f) + \beta_4 \times X_f + \mu_{f,ind} + \varepsilon_{fp}$$

Where f refers to firm and p refers to project. The dependent variable Y_{fp} is *Excess return* (*Abnormal return*) on the firm' stock around the date of the project announcement in panel A (panel B). The unit of observation is a firm-project. *Election* is a dummy variable that takes the value 1 for projects announced in election years. We control for *Industry fixed effects* and lagged value of other firm-specific variables: *ROA*, *Debt/Assets*, *Size*, *Tobins' Q* in all of these tests. All variables are defined in detail in Appendix A. The standard errors are robust to heteroscedasticity and clustered at the firm level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

	Panel A: Excess Returns				
	Short Window			Longer Window	
	(1)	(2)	(3)	(4)	(5)
Event Window	[-1D,+1D]	[-3D,+3D]	[-15D,+15D]	[-1D,+1Y]	[-1D,+3Y]
Election	-0.124	-1.293**	-0.698	1.163**	-0.804
	(0.243)	(0.627)	(1.488)	(0.554)	(1.651)
SOE	0.577	-0.392	-1.843	-0.295	2.515
	(0.611)	(2.834)	(9.681)	(0.935)	(3.645)
Election X SOE	-1.513***	-3.379***	-8.089***	-1.906**	-8.791***
	(0.464)	(1.242)	(2.774)	(0.799)	(2.695)
Observations	2380	2380	2380	2380	2380
R^2	0.228	0.195	0.178	0.269	0.380

	Panel B: Abnormal Returns				
	Short Window			Longer Window	
Event Window	[-1D,+1D]	[-3D,+3D]	[-15D,+15D]	[-1D,+1Y]	[-1D,+3Y]
Election	-0.171	-1.385**	-1.222	1.377**	-0.670
	(0.373)	(0.627)	(1.476)	(0.550)	(1.703)
SOE	-0.010	-0.915	-2.334	0.085	1.518
	(0.795)	(2.816)	(9.620)	(0.919)	(3.447)
Election X SOE	-1.863**	-2.504**	-5.519**	-1.662**	-8.532***
	(0.821)	(1.163)	(2.301)	(0.690)	(2.892)
Observations	2380	2380	2380	2380	2380
R^2	0.237	0.193	0.188	0.273	0.358

Table 12: **Announcement Returns of SOE Investments in Close Districts**

This table presents results from our multivariate tests on announcement returns of politically driven investments. The estimates are based on the following specification:

$$Y_{fpt} = \alpha_0 + \beta_1 \times (\text{SOE}_f) + \beta_2 \times \text{Close}_{pt} + \beta_3 \times \text{Close}_{pt} \times (\text{SOE}_f) + \beta_4 \times X_f + \mu_{f,ind} + \varepsilon_{fp}$$

Where f refers to firm and p refers to project. The dependent variable Y_{fp} is *Excess return* (*Abnormal return*) on the firm' stock around the date of the project announcement in panel A (panel B). The unit of observation is a firm-project. *Close* is a dummy variable that takes the value 1 for districts if the Incumbent party's Margin of victory or loss is less than 5% and 0 otherwise. We control for *Industry fixed effects* and lagged value of other firm-specific variables: *ROA*, *Debt/Assets*, *Size*, *Tobins' Q* in all of these tests. All variables are defined in detail in Appendix A. The standard errors are robust to heteroscedasticity and clustered at the firm level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

Panel A: Excess Returns

	Short Window			Longer Window	
	(1)	(2)	(3)	(4)	(5)
Event Window	[-1D,+1D]	[-3D,+3D]	[-15D,+15D]	[-1D,+1Y]	[-1D,+3Y]
Close	0.497*	0.864	3.701	1.407	2.107
	(0.279)	(0.964)	(2.850)	(0.855)	(1.382)
SOE	0.305	-1.007	-3.039	-0.345	-1.101
	(0.557)	(2.571)	(8.638)	(1.076)	(3.673)
Close X SOE	-1.495**	-3.863*	-9.151*	-2.413*	-4.148*
	(0.638)	(2.218)	(5.523)	(1.290)	(2.462)
Observations	2380	2380	2380	2380	2380
R^2	0.227	0.189	0.179	0.204	0.370

Panel B: Abnormal Returns

	Short Window			Longer Window	
Event Window	[-1D,+1D]	[-3D,+3D]	[-15D,+15D]	[-1D,+1Y]	[-1D,+3Y]
Close	0.221	0.977	3.863	1.417	2.798*
	(0.399)	(0.952)	(2.871)	(0.861)	(1.610)
SOE	-0.334	-1.297	-2.988	0.200	0.641
	(0.696)	(2.567)	(8.585)	(1.045)	(3.796)
Close X SOE	-1.889**	-3.433*	-7.335	-1.727	-4.681*
	(0.774)	(2.017)	(5.352)	(1.267)	(2.716)
Observations	2380	2380	2380	2380	2380
R^2	0.235	0.189	0.189	0.210	0.369

Appendix A: Variable definitions

- *Abnormal return*: The difference between the return on a firm's stock and the return predicted by the CAPM model with the S&P Nifty as the benchmark market portfolio over the day of the project announcement. The CAPM model is estimated using daily returns on the firm's stock and the S&P Nifty over the preceding 3 months.
- *Absolute Margin*: The absolute value of difference between the percentage of votes received by ruling party coalition and the opposition parties in a district.
- *Announced*: A dummy variable that takes the value 1 if at least one project was announced in the district in a year.
- *Announcement (Status)*: A dummy variable that takes the value 1 if the project has been announced but no work has yet started.
- *Central government*: Dummy variable that takes the value 1 for firms owned by central government.
- *Close*: Dummy variable that identifies districts where the margin of victory or loss of the incumbent party during the previous election was less than 5%.
- *Completed (Status)*: A dummy variable that takes value 1 for projects that have been completed.
- *Constituencies won*: the number of constituencies in a district where the winner belonged to the incumbents party during the current elections.
- *Cost ratio:* the ratio of total cost of all investments announced by Central SOEs in a district to the total cost of all investments
- *Debt/Assets*: The ratio of total debt to total assets.
- *Election*: Dummy variable that takes the value 1 for the fiscal year immediately preceding the election.
- *Excess return*: The difference between the return on a firm's stock and the return on the benchmark S&P Nifty index over the day of the project announcement.
- *Expansion/New Unit*: A dummy variable that takes the value 1 for projects that are a substantial expansion or a new unit and 0 for renovations and minor modifications.
- *Federal minister*: Dummy variable that identifies districts where the Member of Parliament is a Federal Cabinet minister.
- *Firm size*: Natural log of (1+Total Assets)
- *High Employment Growth Industry*: Dummy variable that takes the value 1 for industries with above median employment growth each year.
- *Infrastructure Industry*: Dummy variable based on NIC codes that takes the value 1 for industries engaged in transportation (roadways, railways, airways and waterways), development of electricity and energy, waste management, communication, education and health services.
- *Margin of Victory*: Difference between the percentage of votes received by ruling party coalition and the opposition parties in a district.
- *Majority*: Dummy variable that identifies districts where the margin of victory of the incumbent party during the previous election was above the 75th percentile.
- *Non-government firms*: Dummy variable that takes the value 1 for non-government firms.
- *Number of projects*: Total number of projects announced by firms in a district in a year.
- *Number of high employment growth industry projects*: Total number of projects announced by firms in *High Employment Growth Industry* in a district in a year.
- *Number of infrastructure projects*: Total number of projects announced by firms in *Infrastructure Industry* in a district in a year.

- *1 (2) year (years) before election*: identifies the one-year period ending twelve (twenty four) months prior to the election.
- *1 (2) year (years) after election*: identifies the one-year period starting immediately (twelve months) after an election.
- *Percentage(Central)*: The ratio of number of number of projects announced by central SOEs to the total number of projects announced in a district in a year.
- *Per capita GDP growth*: Annual state level per capita GDP growth.
- *Percentage(State)*: The ratio of number of number of projects announced by state SOEs to the total number of projects announced in a district in a year.
- *Project size*: The total estimated cost of a project.
- *Project Value Ratio*: The ratio of the total cost of all projects announced by state SOEs in a district to the total cost of all projects announced in the district.
- *ROA*: The ratio of operating profits (EBITDA) to total assets.
- *Scheduled*: A dummy variable that takes value 1 if 5 years have passed since the last election.
- *Stalled/Abandoned (Status)*: A dummy variable that takes value 1 for projects that are classified as stalled or abandoned.
- *Stalled/Abandoned Alternate (Status)*: A dummy variable that takes value 1 for a) projects that are explicitly classified as stalled or abandoned and b) for projects that are in announcement or under implementation status and 10 or more years have passed since the project was announced.
- *Years to Completion*: The time (in years) it takes to complete a project since announcement.
- *Years to Implementation*: The time (in years) it takes to start implementation of a project since announcement.
- *Under Implementation (Status)*: A dummy variable that takes value 1 for projects that are classified as being under implementation. That is the work has started on the project but not yet completed.

Table A1: **Sub-Sample Robustness Tests**

This table reports the results for our tests based on sub-samples of state elections.The tests are based on the following regression specification:

$$Y_{ijt} = \alpha_0 + \beta_1 \times Election_{it} + \gamma \times C_{it} + \mu_j + \mu_t + \varepsilon_{ijt}$$

Where i refers to state, j refers to district and t refers to year. *Election* is a dummy variable that identifies election years. *Scheduled* is a dummy variable that takes the value 1 if 5 years have passed since the previous election. Y is *Number of projects* announced in a district by SOEs (Non-govt firms) in Columns (1), (4), and (7) ((2), (5), and (8)) . The dependent variable in Columns (3), (6), and (9) is the percentage of projects announced by SOEs in a district. All variables are defined in detail in Appendix A. The data covers the period 1995-2009. The election data is from Election commission of India and data on new project announcements was obtained from CAPEX, a database of new projects announced in India. We control for *district* and *year fixed effects* in these tests. The standard errors are robust to heteroscedasticity and clustered at the district level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

	Off-National Cycle State Elections			Scheduled State Elections			Un-Scheduled State Elections		
	State SOEs	Non-govt Firms	$\frac{State}{Total}$	State SOEs	Non-govt Firms	$\frac{State}{Total}$	State SOEs	Non-govt Firms	$\frac{State}{Total}$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Election	0.096***	-0.045	0.033***	0.117**	-0.039	0.035***	-0.026	-0.538***	-0.005
	(0.033)	(0.062)	(0.009)	(0.050)	(0.057)	(0.008)	(0.069)	(0.187)	(0.020)
State level real gdp growth	-0.604***	0.416	-0.186***	-0.778***	-0.309	-0.144***	0.473	1.309	-0.132
	(0.179)	(0.285)	(0.053)	(0.195)	(0.376)	(0.052)	(0.609)	(1.642)	(0.172)
Constant	0.046	0.139	0.027**	-0.048	-0.121	0.012	0.159**	1.318***	0.030
	(0.030)	(0.134)	(0.012)	(0.052)	(0.134)	(0.009)	(0.077)	(0.277)	(0.019)
Observations	6177	6177	6177	7181	7181	7181	1231	1231	1231
R^2	0.247	0.564	0.134	0.265	0.617	0.127	0.462	0.736	0.255

Table A2: **National Elections and Corporate Investments (Publicly listed SOEs Only)**
This table reports results of our analysis based on the sub-sample of investments made by publicly listed SOEs.. The reported estimates are from the following panel regression model:

$$Y_{ijt} = \alpha_0 + \beta_1 \times Election_{it} + \gamma \times C_{it} + \mu_j + \varepsilon_{ijt}$$

Where i refers to state, j refers to district and t refers to year. *Election* is a dummy variable that identifies election years. Y is *Number of projects* announced in a district by publicly listed SOEs in Columns (1) and publicly listed Non-govt firms in Column (2). The dependent variable in Columns (3) is the percentage of projects announced by listed Central SOEs in a district. All variables are defined in detail in Appendix A. The data covers the period 1995-2009. The election data is from Election commission of India and data on new project announcements was obtained from CAPEX, a database of new projects announced in India. We control for *district fixed effects* in these tests. The standard errors are robust to heteroscedasticity and clustered at the district level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

	Number Of Projects		Percentage
	Central (Listed) SOEs	Non-govt Firms	$\frac{Central(Listed)}{Total}$
	(1)	(2)	(3)
Election	0.028***	-0.035	0.013**
	(0.011)	(0.029)	(0.005)
State level real gdp growth	0.174**	2.223***	0.030
	(0.079)	(0.337)	(0.045)
Constant	0.058***	0.546***	0.026***
	(0.004)	(0.016)	(0.003)
Observations	5039	5039	5039
R^2	0.279	0.482	0.134

Table A3: **Political Ideology and Corporate Investments**

This table reports the results for our analysis examining the impact of the political ideology of the incumbent party on the investments of firms around national elections.The reported estimates are from the following panel regression model:

$$Y_{ijt} = \alpha_0 + \beta_1 \times Election_{it} + \beta_2 \times Left_{ijt} + \beta_3 \times Election_{it} \times Left_{ijt} + \gamma \times C_{it} + \mu_j + \varepsilon_{ijt}$$

Where i refers to state, j refers to district and t refers to year. Y is *Number of projects* announced in a district by Central SOEs in Columns (1) and Non-govt firms in Column (2). The dependent variable in Columns (3) is the percentage of projects announced by Central SOEs in a district. *Left* is a dummy variable identifies district-years where the incumbent party was left leaning. All variables are defined in detail in Appendix A. Panel A reports results for national elections. The data covers the period 1995-2009. The election data is from Election commission of India and data on new project announcements was obtained from CAPEX, a database of new projects announced in India. We control for *district fixed effects* in these tests. The standard errors are robust to heteroscedasticity and clustered at the district level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

Panel A: National Elections

	Number Of Projects		Percentage
	Central SOEs	Non-govt Firms	$\frac{Central}{Total}$
	(1)	(2)	(3)
Election	-0.087***	-0.467***	-0.023*
	(0.031)	(0.141)	(0.013)
Left	-0.067***	1.512***	-0.049***
	(0.022)	(0.218)	(0.009)
Election X Left	0.191***	-0.168	0.061***
	(0.037)	(0.131)	(0.016)
State level real gdp growth	0.489***	1.897***	0.122**
	(0.133)	(0.552)	(0.061)
Constant	0.292***	0.873***	0.099***
	(0.016)	(0.137)	(0.005)
Observations	5039	5039	5039
R^2	0.482	0.562	0.192

Table A3: **Political Ideology and Corporate Investments**

This table reports the results for our analysis examining the impact of the political ideology of the incumbent party on the investments of firms around state elections.The reported estimates are from the following panel regression model:

$$Y_{ijt} = \alpha_0 + \beta_1 \times Election_{it} + \beta_2 \times Left_{ijt} + \beta_3 \times Election_{it} \times Left_{ijt} + \gamma \times C_{it} + \mu_j + \varepsilon_{ijt}$$

Where i refers to state, j refers to district and t refers to year. Y is *Number of projects* announced in a district by State SOEs in Columns (1) and Non-govt firms in Column (2). The dependent variable in Columns (3) is the percentage of projects announced by State SOEs in a district. *Left* is a dummy variable identifies district-years where the incumbent party was left leaning. All variables are defined in detail in Appendix A. Panel A reports results for state elections. The data covers the period 1995-2009. The election data is from Election commission of India and data on new project announcements was obtained from CAPEX, a database of new projects announced in India. We control for *district* and *year fixed effects* in these tests. The standard errors are robust to heteroscedasticity and clustered at the district level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

Panel B: State Elections

	Number Of Projects		Percentage
	State SOEs	Non-govt Firms	$\frac{State}{Total}$
	(1)	(2)	(3)
Election	-0.050	-0.102	-0.028*
	(0.053)	(0.160)	(0.016)
Left	0.138***	0.579***	0.019
	(0.041)	(0.168)	(0.012)
Election X Left	0.202*	-0.177	0.077***
	(0.118)	(0.176)	(0.020)
State level real gdp growth	-0.752***	0.738	-0.199**
	(0.259)	(0.463)	(0.079)
Constant	0.034	-0.091	0.021
	(0.051)	(0.211)	(0.016)
Observations	5142	5142	5142
R^2	0.399	0.679	0.232

Table A4: **Implementation Returns of Election Year SOE Investments**

This table presents results from our multivariate tests on implementation returns of politically driven investments. The estimates are based on the following specification:

$$Y_{fpt} = \alpha_0 + \beta_1 \times (\text{SOE}_f) + \beta_2 \times \text{Election}_{pt} + \beta_3 \times \text{Election}_{pt} \times (\text{SOE}_f) + \beta_4 \times X_f + \mu_{f,ind} + \varepsilon_{fp}$$

Where f refers to firm and p refers to project. The dependent variable Y_{fp} is *Excess return* (*Abnormal return*) on the firm' stock around the date of the project announcement in panel A (panel B). The unit of observation is a firm-project. *Election* is a dummy variable that takes the value 1 for projects announced in election years. We control for *Industry fixed effects* and lagged value of other firm-specific variables: *ROA*, *Debt/Assets*, *Size*, *Tobins' Q* in all of these tests. All variables are defined in detail in Appendix A. The standard errors are robust to heteroscedasticity and clustered at the firm level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

	Panel A: Excess Returns				
	Short Window			Longer Window	
	(1)	(2)	(3)	(4)	(5)
Event Window	[-1D,+1D]	[-3D,+3D]	[-15D,+15D]	[-1D,+1Y]	[-1D,+3Y]
Election	-0.055	0.314	-0.150	0.120	-1.509
	(0.293)	(0.654)	(1.240)	(0.573)	(1.649)
SOE	0.675	0.766	-2.707	-0.820	5.576**
	(0.805)	(1.397)	(3.057)	(1.282)	(2.252)
Election X SOE	-1.811***	-0.435	-0.567	-0.848	-3.718
	(0.602)	(1.583)	(2.228)	(0.884)	(2.844)
Observations	1820	1820	1820	1820	1820
R^2	0.252	0.282	0.250	0.347	0.456

	Panel B: Abnormal Returns				
	Short Window			Longer Window	
Event Window	[-1D,+1D]	[-3D,+3D]	[-15D,+15D]	[-1D,+1Y]	[-1D,+3Y]
Election	0.241	0.623	-0.131	0.178	-1.501
	(0.389)	(0.692)	(1.259)	(0.574)	(1.649)
SOE	0.147	0.636	-1.932	-0.911	5.117**
	(0.758)	(1.472)	(3.065)	(1.285)	(2.179)
Election X SOE	-0.326	-0.359	-0.121	-0.868	-3.561
	(1.008)	(1.778)	(2.273)	(0.889)	(2.849)
Observations	1820	1820	1820	1820	1820
R^2	0.309	0.284	0.260	0.345	0.455

Table A5: **Implementation Returns of SOE Investments in Close Districts**

This table presents results from our multivariate tests on implementation returns of politically driven investments. The estimates are based on the following specification:

$$Y_{fpt} = \alpha_0 + \beta_1 \times (\text{SOE}_f) + \beta_2 \times \text{Election}_{pt} + \beta_3 \times \text{Election}_{pt} \times (\text{SOE}_f) + \beta_4 \times X_f + \mu_{f,ind} + \varepsilon_{fp}$$

Where f refers to firm and p refers to project. The dependent variable Y_{fp} is *Excess return* (*Abnormal return*) on the firm' stock around the date of the project announcement in panel A (panel B). The unit of observation is a firm-project. *Close* is a dummy variable that takes the value 1 for districts if the Incumbent party's Margin of victory or loss is less than 5% and 0 otherwise. We control for *Industry fixed effects* and lagged value of other firm-specific variables: *ROA*, *Debt/Assets*, *Size*, *Tobins' Q* in all of these tests. All variables are defined in detail in Appendix A. The standard errors are robust to heteroscedasticity and clustered at the firm level. (***), (**), (*) denote statistical significance at 1%, 5%, and 10% levels respectively.

Panel A: Excess Returns

	Short Window			Longer Window	
	(1)	(2)	(3)	(4)	(5)
Event Window	[-1D,+1D]	[-3D,+3D]	[-15D,+15D]	[-1D,+1Y]	[-1D,+3Y]
Close	0.437	-0.404	1.078	-0.368	3.226*
	(0.323)	(0.530)	(1.391)	(0.702)	(1.829)
SOE	0.291	0.494	-2.232	-2.769	5.267**
	(0.731)	(1.184)	(2.905)	(2.184)	(2.433)
Close X SOE	-1.684**	0.726	-3.579	-0.817	-6.453
	(0.744)	(1.304)	(2.585)	(1.681)	(4.035)
Observations	1820	1820	1820	1820	1820
R^2	0.250	0.282	0.251	0.297	0.538

Panel B: Abnormal Returns

	Short Window			Longer Window	
Event Window	[-1D,+1D]	[-3D,+3D]	[-15D,+15D]	[-1D,+1Y]	[-1D,+3Y]
Close	-0.668**	-0.643	0.449	-0.370	3.221*
	(0.327)	(0.494)	(1.399)	(0.704)	(1.833)
SOE	-0.123	0.264	-1.879	-2.873	4.823**
	(0.642)	(1.160)	(3.122)	(2.213)	(2.329)
Close X SOE	0.882	1.588	-0.612	-0.902	-6.182
	(0.813)	(1.328)	(2.945)	(1.695)	(3.996)
Observations	1820	1820	1820	1820	1820
R^2 0.312	0.284	0.260	0.296	0.537	

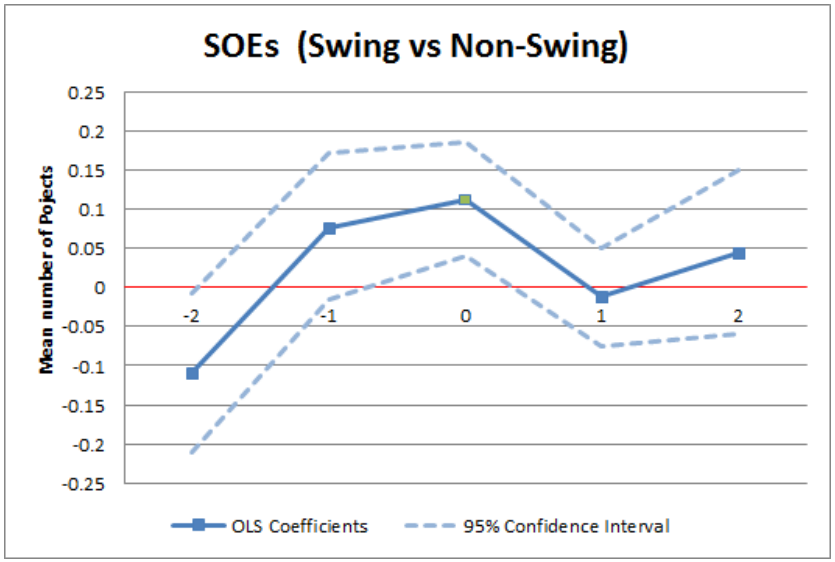


Figure A1.1

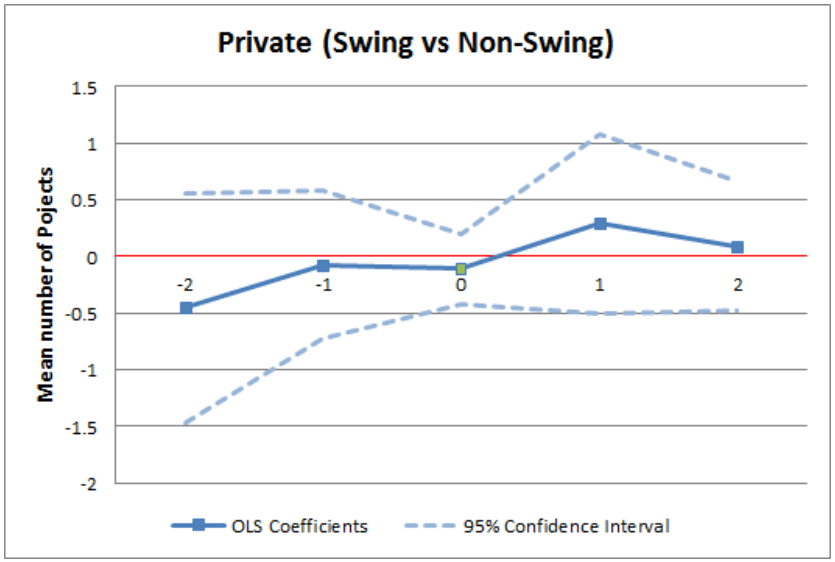


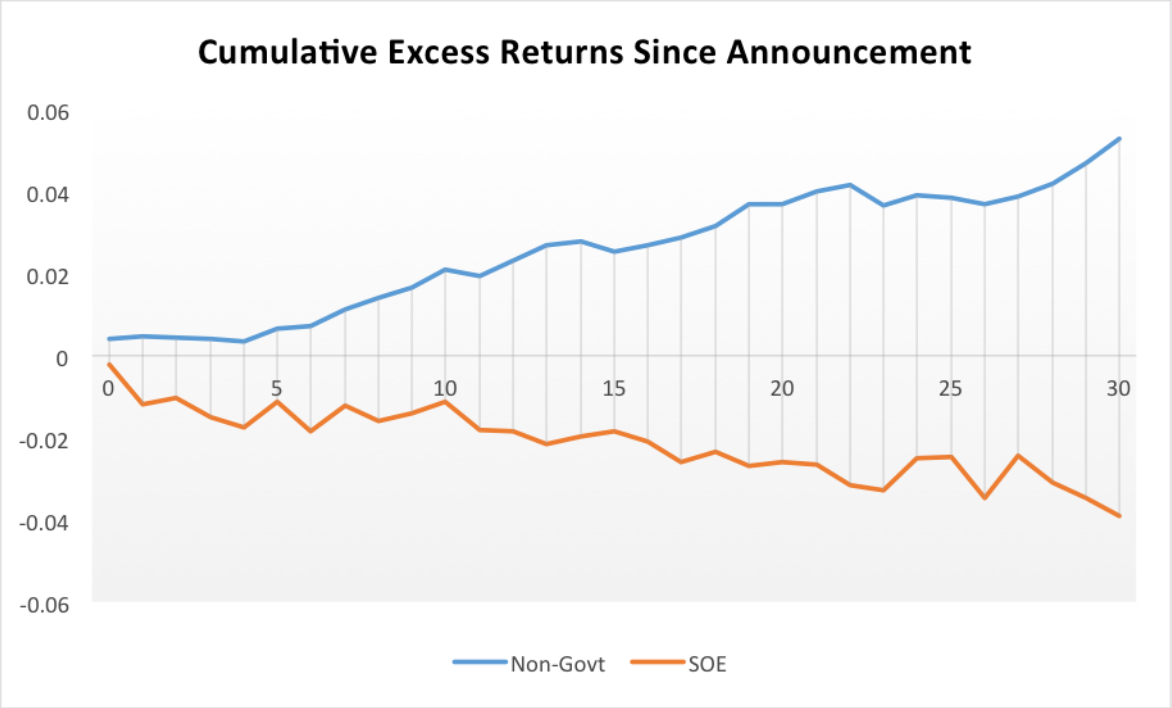
Figure A1.2

Figure A1: This figure traces the the difference between the mean number of projects announced by central SOEs (Figure A1.1) and non-govt enterprises (Figure A1.2) in closely contested and other districts over the national election cycle. The point estimates are sum of coefficients $\eta_n + Close$ from the following panel regression specification:

$$Y_{ijt} = \alpha_0 + \sum_{1}^{4} \eta_n \times Close_{ijt} \times Sc_{-njt} + \phi \times Close_{ijt} + \sum_{1}^{4} \beta_n \times Sc_{-njt} + \gamma \times C_{it} + \mu_j$$

where i denotes state, j denotes district and t denotes year. Dotted lines denote the 95% confidence interval. We control for *district fixed effects* in these tests and standard errors are clustered at district level.

Figure A2: **Cumulative excess return of Election Year Corporate Investments**
This figure shows cumulative return over 30 days for election-year projects announced by SOEs and non-government firms.



Web Appendix

WA1 Indian Political System

India has a federal parliamentary form of government where legislative power is vested in the two houses of Parliament - the House of the People called the *Lok Sabha* comprising of 543 members directly elected by the people and the Council of States called the *Rajya Sabha* comprising of 250 members who are either nominated or indirectly elected. The representatives to the Lok Sabha are elected by the people for a term of 5 years and an alliance of parties that wins the majority of constituencies forms the government. However, sometimes elections may be held early. The dominant cause of midterm elections is withdrawal of support by a coalition partner (typically due to political conflicts) in which case the ruling party no longer enjoys majority support required to be in power. In our tests, we focus on 4 Lok Sabha elections to the central government namely 1996, 1999, 2004 and 2009. 1 out of the 4 national elections (1999) was held before schedule.[1]

At the state-level, the elected house of state-level legislatives is called "*Vidhan Sabha*". As in the case of the Lok Sabha, the representatives of the Vidhan Sabha are also elected by the people (State Assembly elections) for a term of 5 years. The political party or an alliance of parties that wins majority of the state level electoral constituencies forms the government. Our sample includes data on 93 Vidhan Sabha elections held in 30 states. Figure WA.1 in the plots the number of state elections each year and shows the relationship between the timing of state and national elections.

WA1.1 Why do different states have different 5-year election cycle?

Post-Independence in 1951 and 1952, India had its first election cycle for Lok Sabha simultaneously with the first State Assembly elections. The simultaneous elections for Lok Sabha and State Assemblies continued over three subsequent general elections held in the years 1957, 1962 and 1967. However, due to the premature dissolution of some Legislative State Assemblies in 1968 and 1969, the process of simultaneous elections for Lok Sabha and State Assemblies got disrupted for the first time and has remained on different election cycles since then. Furthermore, until the early 1970s, the Indian National Congress was the only major ruling party across India but post 1971, many national/regional parties came into existence. So often a coalition of parties would come together to meet the required majority to form a government in a state. Due to internal conflicts amongst the members of a coalition, one or more of the coalition partners often withdrew support from the ruling government resulting in the premature dissolution of the State Legislative Assemblies. Article 172(1) of the Constitution of India provides for five-year tenure of the State Legislative Assembly from the date of its first sitting. Due to premature dissolution of the State Legislative Assemblies, the re-elected Assemblies could stay in power until they finished their 5-year term. This results in a different 5-year election cycle for each state and varies with the time of premature dissolution.

Of the 93 state elections in our sample, 13 elections were held before schedule. We discuss the specific circumstances of these 13 early elections in detail below. Overall, eight of these elections were held prematurely due to withdrawal of support by coalition members. In two cases, the ruling party itself dissolved the

[1] The 1996 election is the only election where parties that staked claim to form the government did not win a majority of seats in Lok Sabha. While the Bharatiya Janata Party (BJP) could not find support from other parties to form the government, the Indian National Congress (INC) chose to support a government ruled by an alliance of small regional parties headed by Janata Dal (only 42 seats) from outside. It is worth noting that these small regional parties had never been key players at the national level. Moreover, although these regional parties came together to form a government, they differed sufficiently in their ideologies and spent most of their time balancing the delicate coalition and appeasing alliance members. Thus this government collapsed eventually leading to the 1998 election. Since, it is difficult to clearly identify incumbents and opposition parties for the 1998 elections, we drop 1998 elections from our empirical analysis based on National elections. Note that 1998 is not dropped in our analysis based on state elections.

government resulting in fresh elections. Two elections were held early on account of allegations of corruption and poor governance. Finally, one of the early election was held early by the Election commission of India to avoid the snow fall season.

- **Uttar Pradesh (1996)**: In 1993 a coalition government was formed in the Indian state of Uttar Pradesh (UP) between Samajwadi party (SP, a regional party led by Mulayam Singh Yadav), Bahujan Samaj Party (BSP, regional party led by Mayawati) and the Bharatiya Janata Party (BJP, a national party). Mayawati of BSP was sworn in as the chief minister. However, BJP withdrew its support in 1996. Due to lack of majority, President Shankar Dayal Sharma dissolved the government, brought Uttar Pradesh under president's rule and called for fresh elections.
- **Gujarat (1998)**: In 1995, BJP won a majority and formed the government. While the BJP legislators initially supported Shankersinh Vaghela as the Chief Ministerial candidate, Keshubhai Patel was eventually sworn in as the Chief Minister of Gujarat in 1995. However, later in September 1995, Vaghela garnered support of 47 MLAs and rebelled against the party leadership. As a compromise, Keshubhai Patel was forced to resign and Suresh Mehta, a Vaghela loyalist was sworn in as the Chief Minister. In 1996, Vaghela ended his support to BJP party after losing in Lok Sabha polls and floated his own party (Rashtriya Janata Party (RJP)) putting an end to Suresh Mehta's rule. Dilip Parikh joined Vaghela's RJP. RJP formed a minority government with the outside support of the Indian National Congress (INC) and Shankersinh Vaghela took oath as a Chief Minister. When the INC threatened to withdraw its support in January 1997, Vaghela had to step down and Dilip Parikh became the Chief Minister. However out of 182 members Gujarat Legislative Assembly, there were only 46 RJP members while there were 44 INC, 76 BJP and 15 Independent members. Consequently, the minority government formed with the outside support of INC faced constant threats of withdrawal of support by other members of the coalition. In light of the ensuing political instability, Dilip Parikh tendered his resignation to the Gujarat Governor resulting in fresh assembly elections on 5 January 1998.
- **Arunachal Pradesh (1999)**: Geogong Apang from the party Arunachal Congress (AC) was elected as Chief Minister in 1995 after his party won the majority. He held the position until 1999, when he resigned following a no-confidence vote caused by a split in the ruling party. Mukul Mithi, forest minister in Apang's cabinet, split from AC and formed the Arunchal Congress- Mithi (AC(M)). In fresh elections held in 1999, AC(M) was able to garner majority and was sworn in as the state's Chief Minister.
- **Maharashtra (1999)**: In the legislative elections held in 1995, Shiv Sena-BJP combined won majority and formed the government. Shiv Sena leader Manohar Joshi took over as Chief Minister on 14 March 1995 and remained in power until 1999. In 1999, Joshi was forced to resign under severe pressure from the opposition, due to allegations about his involvement in a scam regarding reservation of a plot of land in Pune. In 1999, fresh elections were held after Manohar Joshi stepped down from the post of Chief Minister of Maharashtra.
- **Haryana (2000)**: Following 1996 elections, a coalition of the Haryana Vikas Party (HVP), a regional party and BJP formed the government in Haryana. However, before the national elections of 1999, BJP withdrew support from its coalition with HVP and forged a new alliance with another regional party, Indian National Lok Dal (INLD) which has since 1996 gained greater electoral prominence. Fresh elections were subsequently called in 2000. INLD-BJP coalition garnered majority and formed the government subsequently.
- **Gujarat (2002)**: Following 1998 elections, BJP emerged victorious and formed the government with Keshubhai Patel as the Chief Minister. Owing to his deteriorating health and allegations of poor handling of Bhuj earthquakes of 2001, he had to resign. Narendra Modi, the current Prime Minister of India then took over as the Chief Minister. However, he also tendered his resignation following the communal riots in Gujarat in 2002. The assembly was subsequently dissolved and fresh elections were called with BJP winning majority again. Modi was sworn in as Chief Minister for a second term in 2002.

- **Goa (2002)**: In 1999, Francisco Sardinha broke away from Indian National Congress (INC) and formed a new political party - the Goa People's Congress (GPC). In the 1999 elections, GPC formed a coalition government with BJP and Sardinha was sworn in as the Chief Minister. He remained in office till 2000 when he had to resign due to withdrawal of support from the BJP. BJP subsequently put together a delicate coalition and formed the government. Amid high political drama following ambiguity in the outcome of a no-confidence vote brought out against the ruling BJP government, President's rule was imposed and fresh elections were called in 2002.
- **Manipur (2002)**: Following 2000 elections, Manipur State Congress Party (MSCP) formed a coalition government under the Chief Ministership of Wahengbam Nipamacha Singh. However, this government only lasted 11 months due to a split in MSCP engineered by Radhabinod Koijam from Samata Party. Radhabinod Koijam was sworn in as the Chief Minister in February 2001. He led a coalition government named People's Democratic Alliance (PDA) and was representing Samata Party then. This coalition government lasted 106 days when President's rule was declared after the Governor called in a no-confidence vote. The state remained under president rule until fresh elections were held in 2002.
- **Orissa (2004)**: In 2000, a coalition alliance of Biju Janata Dal, a regional party and BJP won majority and formed the government under the leadership of Naveen Patnaik. While there were no conflicts in the coalition, they decide to call elections a year early to be held in 2004 along with national elections. The primary reason put forth by the party was that since elections were anyway scheduled to be held within a year, it made sense to pre-pone the elections and hold it along with National election as this would result in significant savings for the state exchequer.
- **Himachal Pradesh (2007)**: While elections were scheduled for February 2008, polls were called 5 months early in Himachal Pradesh on account of a petition filed by some legislators in the High Court. These legislators argued that elections in their constituencies were typically delayed on account of heavy snow in February. Thus their results could potentially be tainted by the outcome of polls in other constituencies. In light of this the Election Commission of India called for early elections. All political parties were caught unaware by this decision of the commission as this was the first time when the ruling party had not willing dissolved the government nor was President's rule imposed yet elections were called early.
- **Karnataka (2008)**: In the 2004 state legislative assembly elections, BJP party won 79 out of the 224 seats followed by the INC winning 65 seats and Janata Dal (secular) (JD (S)) winning 58 seats. Though BJP had the highest number of seats, INC formed a coalition government with JD (S) party. Dharam Singh of Congress was elected as the Chief Minister. JD (S) withdrew its support to INC and instead formed an alliance with the BJP in 2006. The alliance between JD (S) and BJP was based on an agreement that Kumaraswamy would be the Chief Minister for the first 20 months and B.S. Yedyurappa of the BJP would be the Chief Minister for the next 20 months. This alliance collapsed in October 2007 after Kumaraswamy refused to let Yedyurappa take over as the Chief minister after the first 20 months as agreed upon earlier in 2006. President's rule was declared on 9 October 2007 and it lasted for 33 days until 11 November 2007. The BJP and JD (S) briefly got together again to form a short-lived government of 7 days from 12 November 2007 to 19 November 2007, which collapsed over power sharing disagreements. Due to dissolution of the assembly, the state came under the President's rule once again. Fresh elections were called for in 2008.
- **Jharkhand (2009)**: In 2005, BJP formed the government the support of few independent Legislators headed by Arjun Munda as the Chief Minister. However, this government collapsed when Madhu Koda and three other independent legislators withdrew support to Arjun Munda's government. Koda then became the Chief Minister sewing together a coalition with multiple parties, Jharkhand Mukti Morcha (JMM), Rashtriya Janata Dal, Jaua Manji group, Nationalist Congress Party, All India Forward Bloc, 3 independent MLAs and the outside support of INC. This government also fell through on 17 Aug 2008 as JMM withdrew support from the Koda government. On 27 August 2008, Sibhu Soren of JMM took over as the Chief Minister. However, Shibu Soren subsequently lost in the assembly by-poll on 8 January 2009 to Gopal Krishna Patar of Jharkhand Party. This defeat led to Shibu Soren's resignation on 12 January 2009 from the post of Chief Minister. On 19 January 2009, the state was placed under the President's rule until 29 December 2009 when fresh elections were held.

- **Haryana (2009)**: The 11th Legislative Assembly of Haryana commenced from 21 March 2005 to 21 August 2009. The ruling party, Indian National Congress with Bhupinder Singh Hooda as the Chief Minister called for early elections in 2009 hoping to cash on their successful show in recently concluded national elections, where they won 9 out of 10 constituencies. INC won majority and Hooda was reinstated as the Chief Minister.

WA2 State-owned Enterprises in India

State-owned enterprises (SOEs) are an important element of the Indian economy, even on a global scale. Kowalski et al. (2013) report that India is only second to China in having the highest number of SOEs that rank among the largest corporations in the world. Central SOEs are those that are owned by the Central Government where as State SOEs are enterprises completely owned and controlled by various state governments. As of 31st March 2009 (the last year of our sample period), there were 246 central SOEs and 863 state SOEs.[2] State SOEs are significantly smaller than central SOEs. The gross revenue generated by Central SOEs during the period 2008-2009 was 23% of national GDP. During the same period their contribution to total tax collected was 22%. Over the same period, state SOEs contributed to 6% of GDP in terms of gross revenue. The total net worth of these SOEs stood at approximately $56 billions. Out of the 246 central SOEs, 41 were publicly listed and accounted for approximately 27% (approximately $185 billion) of the total market capitalization of all firms listed on the National Stock Exchange. Only 6 of the State SOEs were publicly listed. However, only 4 of these have announced projects during our sample period.

The decision making body of the central government encompasses the council of cabinet ministers who are assigned key portfolios under the guidance of the Prime Minister who is also the de facto head of the cabinet. Ministries are typically assigned to individuals that rank higher up in the political party hierarchy and are known to be "loyal" to the party leaders. Each of these ministers heads an individual ministry and directly controls all Central SOEs under the ministry's jurisdiction.[3] As of 2009, there were 38 administrative ministries controlling a total of 246 SOEs on behalf of the government of India. The Department of Public Enterprises is the nodal agency between all ministries and the SOEs and provides a listing of all the SOEs under each of the ministries. For instance, the Federal Minister of Steel exercises control over all Central Government SOEs that are engaged in production of steel. This includes eleven SOEs under his direct control, including Steel Authority of India Limited (SAIL), which is one of the largest manufacturers of steel in the world.

WA2.1 Top Management and Board Appointment in SOEs

Appointments of managerial heads for SOEs are subject to approval by respective federal ministers. The typical CEO is either a current or former government official or someone promoted from within the SOE. We were able to verify this by hand-collecting biographies of CEOs of all the listed SOEs including name, education, career background, whether he/she is from the Government, and whether he/she belongs to the Civil Administrative Services for the period 2001-2009. The data was available for 86% of the firms in our sample and in each case, the CEO was a current or former (retired) government official. We also collected the name and background information on CEOs for a random sample of 90 unlisted SOEs from a variety

[2] The data on number of SOEs and their economic significance is from the Department of Public Enterprises, Government of India. While data on Central SOEs is revised annually, the last consolidated data on State SOEs was updated in March 2010, See http://www.dpeslpe.gov.in/SLPEMenu.htm [Accessed in April 2017] for information on state SOEs and http://dpe.gov.in for information on central SOEs. As of 31st March 2016, there were 244 operating Central SOEs generating a gross revenue of $289 billion (13.6% of the GDP.)

[3] The initial appointment is not conditional on having a parliamentary seat. Thus, a Cabinet minister may be appointed if they are not members of Parliament for a duration of six months. After that time, the minister must secure his position through election. During this time, the Cabinet member will not be able to vote in Parliament.

of sources including newspapers, government websites, and career histories from Capital IQ, and Linkedin. In all these cases, the CEO was a former (retired) government employee. Thus, the government maintains direct influence over the SOEs through such appointments, allowing for a clean identification of political influence over SOEs. A similar process is followed for executive appointments at state SOEs as well.[4]

Furthermore, while SOE boards are given decision making powers as outlined by their corporate governance code, in practice, empowered boards have little or no say in strategy formulation or CEO hiring and firing decisions due to Government's domination of the boards of these SOEs (Arrobio et al. 2014). The board is typically headed by a Chairman/Managing Director (CMD: equivalent of a CEO) and consists of three kinds of directors:

1. Government Appointees: These directors represent the Government as the shareholder. A maximum of 2 such directors are allowed on a central SOEs board. The Government Appointees are directly appointed by the concerned minister. Typically, the Additional or Joint secretary of the concerned ministry which has jurisdiction of the SOE are appointed as directors. These secretaries are senior ranking government bureaucrats (civil servants) that are responsible for the administration of respective ministries.
2. Functional Directors: They comprise of the senior management of the company. They are appointed for a maximum of 5 years. However, the government retains the right to terminate their appointment with a three months notice.
3. Independent Directors: The eligibility criteria for an independent director is stipulated by the department of public enterprises and revised from time to time.

While the appointment of the functional and independent directors is not at the sole discretion of the cabinet minister, the ministry exerts significant influence over the appointments of these other two categories of directors as well. The process of appointment of the functional and independent directors is slightly convoluted and varies by type of firm. Specifically, the SOEs are categorized into four schedules A, B, C and D based on their size, past performance, and number of employees, among other factors. First, the list of appointees for all four categories of firms need to be cleared by the concerned ministry. Second, the final selection power rests directly with the minister in case of Schedule C and D companies. In case of Schedule A and B companies, the final selection is subject to approval by the Appointments Committee of Cabinet (ACC). The ACC is chaired by the prime minister and includes the Cabinet Minister.[5] Thus, even the appointment of independent directors is vulnerable to political influence and often includes leaders from the incumbent party. For instance, both the current government headed by the Bhartiya Janta Party and the previous government headed by the Indian National Congress (INC) have received flak for appointing its party leaders/loyalists as independent directors in SOEs.[6]

WA3 CAPEX DATA

The CAPEX database is maintained by the Centre for Monitoring Indian Economy (CMIE), a privately-owned think-tank unaffiliated with the Government of India and provides a comprehensive coverage of investment activity in India. CAPEX data serves as the source for several Government publications including the annual Private Corporate Investments Growth and Prospects put out by the Reserve Bank of India. As also reported on the CMIE website, "State governments are intensive users of CapEx as this helps them track new investment projects being set up in the country as a whole and in their own State."

[4] Fan et al. (2007) note a similar situation in China and use a CEO's political affiliation (current or former government bureaucrat) as a proxy for government influence.

[5] To curtail political interference, the current Indian government under the BJP issued a legal notification to exclude federal ministers other than the Prime Minister and the Home Minister from the ACC.

[6] http://www.financialexpress.com/india-news/after-upa-now-nda-includes-bjp-leaders-as-independent-directors-in-countrys-top-psus/524268/

According to CMIE, any project costing more than Rs.10 million (approximately $0.2 Million) is covered by the database and missing data is backfilled when new information is available. By their definition, a project is announcement by a company of its intention to setup a "specific" additional productive capacity in India. "It could be an intention to set up a steel plant or to build an irrigation canal or to set up a call-centre facility". For instance, Figure WA2 provides a snapshot summary of the information provided in CAPEX for one of the projects in our sample - the "Karuppur Power Project" announced by the private firm Lanco Tanjore Power Co on 1st March 1997, which involves setting up a new power plant with 103mW capacity. The information on investment projects is collected from multiple sources including company annual reports, media reports and various Government agencies when projects require bureaucratic approval. Figures WA3 and WA4 present the total number of projects and the total reported cost of all projects announced each year respectively. The dashed lines coincide with the year of national elections.

Figure WA1: **Annual Frequency of State Elections Since 1995. Dashed lines represent years that coincide with national elections.**

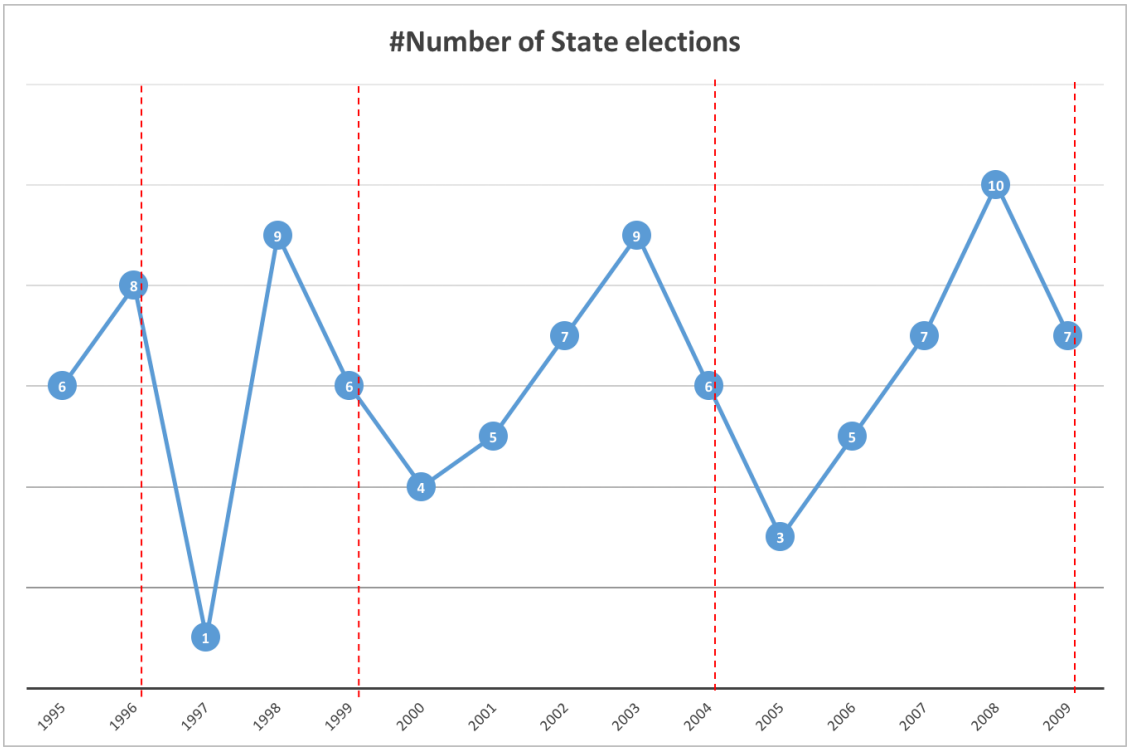
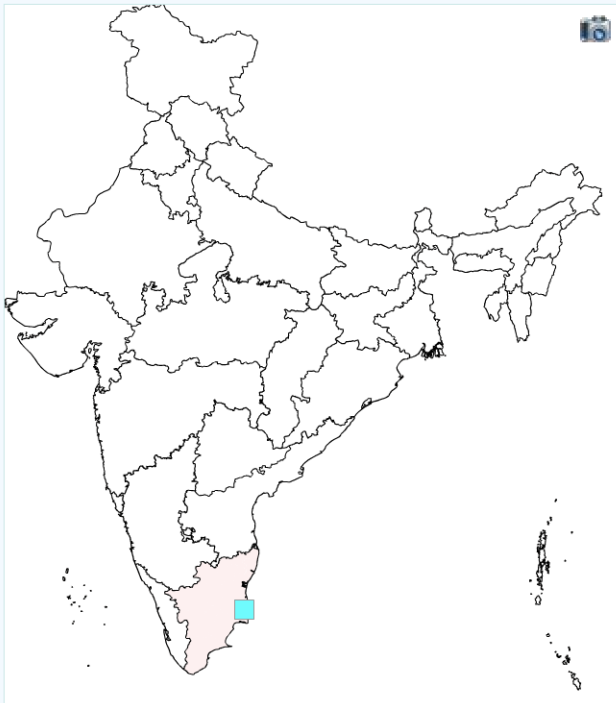


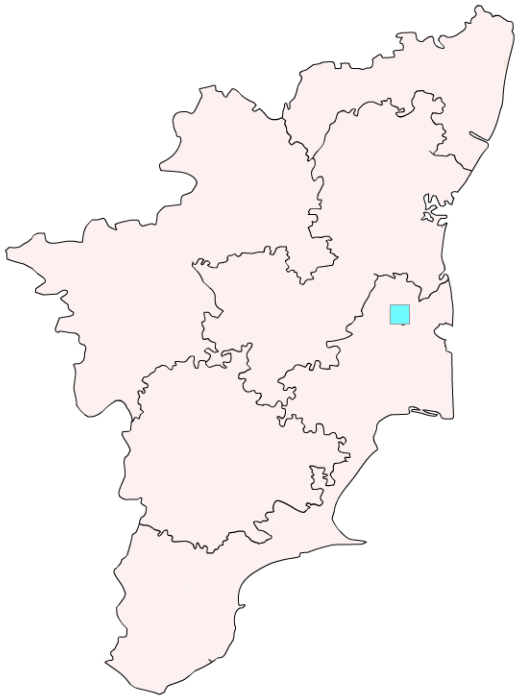
Figure WA2: **Capex Project Example**

Lanco Tanjore Power Co. Ltd. - Karuppur Power Project

Registered Office
3rd Floor, Lanco House, No.25, G N Chetty Road, T Nagar, Chennai 600017 Tamil Nadu Telephone no: 91-44-28157247 Fax: 91-44-28157248 Email: abanpower@lancogroup.com Website:

Basic information	
Cost	Rs. 4,300 million
Status	Completed
Ownership	Aban Loyd Group
Industry	Electricity generation
Completed on	August 2005
Raw Materials	Naphtha Based
Type	New Unit
Contract Basis	
Forex component	
Export commitment	
Employment	
Time Overrun	63 month(s)
Last Updated On	





Project locations
Karuppur, Thanjavur, Tamil Nadu

Project products			
Products/Services/Land area	Capacity (Unit)	Capacity expansion/unit	
		From	To
Electricity Unit	103.00 Mw		

Figure WA2: **Capex Project Example (Continued...)**

Project cost		
Date of initial cost/change in cost	Description	Amount (Rs. million)
01 Mar 1997	Project cost	4,414.5
01 Jul 1998	Project cost	3,000.0
01 Jan 2000	Project cost	3,950.0
01 Jul 2005	Project cost	4,300.0

Project events				
Date of event	Description	Amount (Rs. million)	Qty	Qty. Unit
01 Mar 1997	Date of announcement			
17 Mar 1997	State government approval received			
20 May 1998	PPA (Power purchase agreement) signed			
20 May 1998	Implementation started			
31 Mar 2000	Land acquisition awaited	22.5		
31 Mar 2002	Expenses incurred till	75.6		
31 Mar 2003	Expenses incurred till	81.9		
15 May 2003	State government approval received			

Announcements/events regarding project completion/shelved					
Date of event	Description	Reason	Product name	Qty	Qty. Unit
30 Jun 2000	Initial commissioning date				
27 Dec 2002	Shelved on	Not available			
14 Nov 2003	Stalled upto				
31 Dec 2004	Initial commissioning date				
11 Aug 2005	Commercial production				
11 Aug 2005	Completed				

Figure WA3: **Time Series of Number of Projects**
This figure plots the number of projects announced in each year. Dashed lines represent years that coincide with national elections.

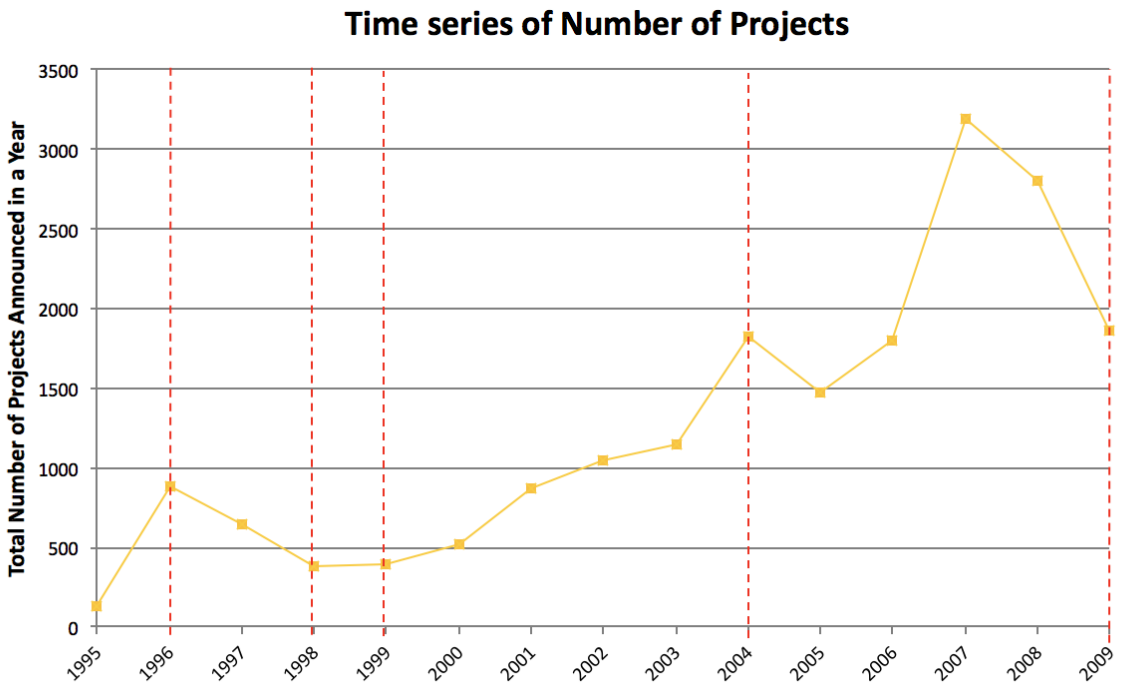


Figure WA4: **Time Series of Total Reported Costs of Projects**
This figure plots the total reported costs of all projects announced in each year. Dashed lines represent years that coincide with national elections.