

The Consequences of Formal Authority Over the Bureaucracy

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Abstract

This paper investigates the consequences of granting formal authority to politicians over bureaucrats in charge of implementing small-scale public infrastructure projects. It studies the impact of granting legislative committee membership to an individual representative on the projects over which that committee has oversight. By assembling a novel data set from Nigeria that tracks public projects from inception to independent audit, I find that committee members are able to influence project implementation in their constituencies. The analysis relies on an instrumental variables strategy in which early career choices are key determinants of committee membership. We observe impacts on stated engagements by officials with political and bureaucratic actors across the project cycle. However, whilst committee members are able to ensure projects in their sphere of influence are initiated and progress further than they otherwise would have, membership reduces the corresponding quality of project implementation and increases the likelihood that implementing bureaucrats report pressure to undertake corrupt acts.

Keywords: politicians, bureaucrats, public goods, decentralization

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1 Introduction

Public projects are often left uncompleted or delivered to a poor quality (World Bank, 2004). Failure to deliver these projects undermines citizen welfare and leads to an estimated loss of US\$150 billion per year in public resources (World Bank, 2007). The extent of these failures varies within and across countries, driving national and global inequalities (Banerjee et al, 2007).

Both politicians and bureaucrats are viewed as critically important agents in the delivery of public projects. Politicians are elected by citizens to decide public policy, including the delivery of public projects, whereas bureaucrats are employed by the government to implement these policies. Politicians may be incentivized to ensure the delivery of potentially vote-winning public projects. Consequently, they may seek to overcome barriers such as bureaucrats' inefficiency, inertia, or corruption.

Existing evidence suggests political intervention in the bureaucracy can improve the delivery of public projects, particularly in the face of political competition. Foster and Rosenzweig (2004) find that democratization improves the quality of targeting of local welfare programs. Callen et al (2014) show that politicians facing electoral competition can reduce doctor absenteeism. Fujiwara (2015) finds that empowering poor voters in Brazil through a electronic voting technology increased the quality of healthcare implementation in the bureaucracy, a particularly pro-poor government service.¹

However, the nature of political intervention is key to its impacts.² Gulzar and Pasquale (2017) use overlapping jurisdictions in India to show that implementation of the National Rural Employment Guarantee Scheme is substantially better where bureaucrats answer to a single politician, implying that appropriately concentrated political incentives can boost the performance of the bureaucracy. Nath (2014) shows that politicians with longer-tenures in power are able to improve the performance of bureaucrats, potentially through being in power when bureaucrats are up for promotion.

The outstanding puzzle is how politicians are able to influence the bureaucratic arm of government, and raise bureaucratic productivity, to satisfy short-term electoral concerns.³ Typically, politicians do not undertake public projects themselves, but must delegate these tasks to bureaucrats, whom they then incentivize. Our understanding of the interactions between politicians and bureaucrats is very limited, both in terms of their causes and their consequences (Iyer and Mani, 2012). More broadly, there is a limited empirical literature on bureaucrats, despite their importance as the main producers of public projects in many countries. To understand the delivery of public projects, it is important to understand the incentive environments in which bureaucrats operate: both formal incentives in a bureaucrat's contract, and informal interactions she has with powerful actors such as politicians.

This paper contributes to our understanding of (1) how politicians use the formal power they are granted through membership of legislative committees to deliver public projects; and (2) the consequences of

¹Other evidence implies that political competition can incentivize politicians to implement better policies beyond the bureaucracy. Besley et al (2010) find that greater political competition leads US states to introduce more pro-growth policies. Ferraz and Finan (2011) show that electoral incentives impact on the extent of corruption by mayors in Brazil. Martinez-Bravo et al (2012) find that democratization in China leads to an increase in the provision of public goods. Persson and Tabellini (2000) and Besley (2006) review the literature on political agency models which highlights the importance of elections as a disciplining device.

²Pepinsky et al (2017) provide an overview of the small theoretical and applied literature on this topic. Khemani (2015) provides evidence from both cross-country and Phillipine-specific data that broad political incentives determine the extent of political interaction with the bureaucracy. She finds that settings in which politicians purchase political support through targeted transfers have lower levels of public service provision.

³The focus in this paper is how politicians influence the bureaucracy within a fixed institutional environment. In what follows, I fix the policy environment, staff and resource distribution, implying that politicians lack the power to recruit, dismiss, demote or change the formal wages of appointed bureaucrats, or modify the legislation governing how their organization functions. These are reasonable assumptions in the current context. Public sector recruitment is delegated to an independent organization that fiercely guards its independence. The modification of legislation governing an organization would require the agreement of a majority of politicians who are likely to have distinct political preferences across the constituencies served by an organization.

these powers in terms of the shifting of the political environment surrounding implementation. The key constraint to empirical progress on these issues has been a lack of adequate data. We rarely observe whether the bureaucracy delivers what was intended, in terms of the technical specifications of a project, but rather what they did deliver. This is a first-order constraint on the empirical study of public sector productivity. A second binding constraint is that we almost never directly measure the personal interactions of politicians with bureaucrats, which is the mechanism of informal incentive provision that I study (Banerjee et al, 2007). I make progress along both margins by collecting detailed data that address these constraints.

The novel data set that I have assembled follows the delivery of a representative set of public projects in the Federal Government of Nigeria, from their initiation in Congress, through the organizations that produce them, to independent evaluations of output. The data contains details of the politicians of Nigeria's 5th National Assembly, surveys of a representative sample of bureaucrats at each of the organizations to which politicians delegate, and evaluations of how effectively each of 3,008 public projects - roughly 7 percent of the government's budget - were delivered by these organizations in 2006 and 2007. Overall, it is a detailed profile of the key actors in the delivery of public projects and how they interact.

The central concern of the paper is that politicians may be made members of legislative committees for reasons that are correlated with the level and quality of project implementation in their constituency. For example, a powerful state may find it easier to both gain membership for their politicians on committees and complete public projects. To counter this concern, I argue that a substantial number of committee positions are reserved for individuals who are uniquely qualified in the relevant sector. These qualifications are based on choices the politicians made many years before their tenure as politicians. The identifying assumption is therefore that the determinants of the sector of profession of politicians are exogenous to the determinants of project implementation thirty years later by the federal government organizations they monitor apart from through their efforts on the committee. This approach is related to a congressional procedure studied by Aghion et al (2005, 2009, 2010) and Cohen et al (2011) which varies the extent of committee power that a politician has. The procedure allocates power to monitor projects in a specific sector to a subset of politicians by making them members of congressional standing committees, but excludes others.

Using pre-existing qualifications as an instrument for committee membership, we find that projects in constituencies of politicians on the appropriate sectoral committee have an 18 percent higher completion rate than those without corresponding membership. The projects are 9 percentage points more likely to start, in the context of over a third of projects slated for implementation never being initiated. However, the projects are only slightly more likely to complete, and the corresponding coefficient is not significant at the usual levels. In contrast, the quality of these projects is substantially lower than their comparators. Projects with politicians on the relevant committee are 12 percentage points less likely to be of satisfactory quality, against a baseline of 81 percent. Politicians use their formal power over the bureaucracy to initiate projects but not to complete them, and at the cost of their quality.

These results provide some of the first empirical evidence as to how politicians interact with the bureaucracy through formal committees. An emerging literature links political competition to improved government performance. For example, Ferraz and Finan (2011) find that re-election incentives push Brazilian mayors to reduce misappropriation of resources in their municipality of 27 percent compared to mayors without such incentives. I find an increase in bureaucratic productivity from exposure to formal power of 18 percent. However, the key contribution of this paper is to provide evidence of the mechanisms through which political competition impacts on bureaucratic performance. I assess the margins along which political competition alters the decisions of politicians, in ways that have subsequent impacts on

the productivity of the bureaucracy.

This paper also provides some of the first micro-level quantitative evidence on the interaction between politicians and bureaucrats. Iyer and Mani (2012) use administrative data on the careers of Indian civil servants to show how politicians affect the process of bureaucratic assignment across public organizations. I document a related margin of interaction: keeping bureaucrats in the same organizations, politicians pressure them through their formal committee positions. The World Bank's Public Officials Surveys (Manning et al, 2000) provide descriptive evidence that political interactions with bureaucrats are significant across the developing world. I provide evidence on a key element of this relationship and quantify its impacts on government productivity.⁴

The paper is organized as follows. Section 2 overviews the relevant aspects of the Nigerian government that define the environment in which politicians and bureaucrats interact. Section 3 then describes the data the analysis relies on. Section 4 outlines my empirical strategy for each stage of the analysis and the corresponding results. Section 5 provides concluding comments and discussion. The Appendix presents further data description and robustness checks.

2 Institutional Background

Nigeria is the most populous country in Africa, with a population of 160 million people, or 20 percent of the population of sub-Saharan Africa. United Nations (2017) predicts that Nigeria's population will be larger than that of the United States by 2050. Nigeria represents a leading setting in which to understand the determinants of public sector productivity in the developing world.

Nigeria also shares important features of its economy and polity with other developing countries. Its income per capita is roughly equivalent to that of India, or to that of sub-Saharan Africa as a whole (World Bank, 2012). Its government makes up a similar proportion of economic activity as those of many other developing countries, representing 26 percent of gross domestic product.⁵ Its political history is marked by colonial origins preceding a string of military dictatorships, much like other developing nations. Thus, Nigeria presents a window into the workings of government in the developing world.

The country returned to civilian rule with Presidential elections and a new constitution in 1999. Its constitution has many similarities to the United States, and its Congress shares many of the functional components of the United States Congress. Nigeria is a Federal Republic, with an elected two-chamber National Assembly composed of the Senate and the House of Representatives. Its three branches are the legislative, executive, and judiciary, and its three tiers are the federal, state, and local government levels. This study will focus on the House of Representatives and on public organizations at the federal government level only.

The House of Representatives is made up of 360 representatives, each with their own constituency. Each politician can therefore be associated with public projects implemented in their constituency. Representatives serve four-year terms, and there are no limits on re-election. I study the representatives of the 5th National Assembly which was elected in 2003 and lasted until 2007.

⁴These issues feed into a wider literature on the determinants of public sector productivity. A different approach to the analysis of productivity in the Nigerian Federal Government is taken in Rasul and Rogger (2017). There, we assess how differences in management practice, the formal rules of organization, underlie differences in productivity.

⁵According to the International Monetary Fund World Economic Outlook Database (October 2012), government expenditures as a percentage of GDP are 21 percent in China, 27 percent in Kenya, 28 percent in India and 30 percent in South Africa.

2.1 Role and composition of standing committees

A core feature of the House of Representatives is the use of standing committees to consider policies relevant to their sector of expertise (such as water, health, etc.). For each sector, the relevant standing committee defines the public projects to be implemented in the coming year and monitors the bureaucratic organization implementing each one. For example, the House Committee on Health will consider all issues relevant to health in Nigeria, including monitoring the building of new health centers by health-related agencies in the Federal Government. Note that we will focus on the sectoral committees that have influence within their sector only, and exclude analysis of the finance and appropriation committee, which have broader influence.

The standing committees play a crucial role in the implementation of the federal budget. The projects I study were all established in law by budget appropriation bills passed in 2006 or 2007. The committees are designated to hold hearings with relevant parties, scrutinize the proposals, and monitor the implementation of budgets for each of the organizations I study. Membership of a standing committee provides a congressperson with significantly greater capacity to influence the implementation of that sector's budget than a non-member.⁶ While there is a complex congressional bargaining game that defines the broad features of government productivity, committee members have formal powers to influence how projects are implemented.

The influencing powers conferred by membership of House committees is the focus of this paper. By becoming a member of a sectoral House committee, the representative gains formal power over organizations in that particular sector. To what extent do we find evidence of these powers being used to differentially affect the fate of projects in the constituencies of committee members? A simple answer to this would be gained by comparing projects under members and non-members. A concern with this direct comparison is that the projects would not be alike, since politicians from constituencies with particular (potentially unobservable) characteristics may find their way onto committees relevant to their present political needs.

To ameliorate this concern, I use the observation that roughly half of committee members are selected due to pre-existing sectoral qualifications and experience. The argument that underlies the identification strategy of this paper is that the decision as to which sector a politician specialized into early in life is unrelated to the implementation environment of a public project in their constituency today, apart from through their influence on the committee. Specifically, when I compare the implementation of projects for which the corresponding representative is on the appropriate committee, I instrument for membership using individual relevant sectoral experience. The coefficient of interest is then the impact of committee membership on project implementation for those politicians selected for their expertise rather than for political reasons.

How members of the sectoral standing committees are selected is thus an important element of my identification strategy. To understand the process in the Nigerian context, I gathered information from the rules governing the House, from academic and committee secretary assessments of committee composition, and from newspaper reports. The Standing Orders of the House of Representatives states that the 'Committee on Selection' is the single authority for the determination of committee composition. The Committee on Selection states that it weighs up macro-political factors, made up of a need to represent

⁶The significant power of standing committees has long been recognized for the US Congress. Woodrow Wilson asserted that committees dominate congressional decision making, stating that "we are ruled by a score and a half of 'little legislatures'" (Wilson, 1887). Richard Fenno, in his magisterial book on committees in congress, states that committee decisions are usually accepted and ratified by the other members of the chamber, giving members of a committee significant influence over the sector they represent (Fenno, 1968). Shepsle and Weingast (1987) and Krehbiel et al (1987) elaborate theories of why the congressional committees are so powerful.

geo-political zones and parties in proportion with their size in the Congress, and a guiding principle that members should be allocated to sectors in which they have relevant qualifications or experience. This implies that politicians who qualified as doctors are placed on the health committee, educationalists on the education committee, and so on. As the Speaker of the House has confirmed in the House Hansard, “In the composition of Membership and Leadership of Committees, special attention will be paid to the skills and relevant experiences of Members in order to achieve greater efficiency” (House Hansard, 2011). Whilst politics certainly plays a role in committee selection, I present evidence that demonstrates that these rules are being followed for a sub-set of members in section 4.1.⁷ Of those individuals who have relevant committee experience, 68 percent are selected on to the relevant committee.

Once on a legislative committee, politicians can pressure bureaucrats working on projects in their constituency through the formal committee review process. This may be in the design of the budget or in its implementation. Legislative committees meet with senior members of sector organizations on a regular basis to assess project progress as well as monitor other aspects of sectoral business such as policy development. By collecting data on each stage of budgeting and implementation, I present evidence in section 4.1 of formal influence in implementation focussed on projects in member constituencies.

Politicians can also separately choose whether to interact informally with bureaucrats at an organization, for example by contacting them outside of formal channels, either personally or through an advocate, and provide them with informal incentives. In roughly a quarter of the projects we study, politicians are reported by bureaucrats in the corresponding implementing organizations to intervene in some way in project execution, and in 14 percent of projects, politicians personally engage with public officials. In the survey of public officials undertaken for this work, public officials state that political interference in their work is significant, and incentives are both positive (such as elicit transfers) and negative (such as coercion). Becoming a member of a committee may reduce the necessity to personally engage bureaucrats, and we see evidence for committee membership leading to a general shift in the equilibrium levels of political engagement of the bureaucracy.

3 Data

To assess the consequences of formal authority over the bureaucracy in the Nigerian public sector, I require data from across government. I have assembled a data set that combines characteristics of politicians with their positions in the National Assembly. Based on a representative sample of projects from the Federal Government of Nigeria’s 2006 and 2007 budgets, I have details of the projects that these politicians oversee in each of their sectors, surveys of the organizations that implement these projects, and evaluations of how effectively they do so. Overall, I have a detailed profile of the delivery of public projects from initiation to implementation.

I begin by describing the core explanatory variables that relate to politicians, their constituencies, the characteristics of projects that are implemented in those constituencies, and the bureaucratic organizations which implement them. I then describe the dependent variables in the final sub-section.

3.1 Politicians and Their Qualifications

A politician in this paper is a Nigerian House of Representatives member. Nigeria’s 5th National Assembly was inaugurated in May 2003, and consisted of 109 senators and 360 representatives. My focus will be

⁷More discussion on the process used by the Committee on Selection to select committee members is provided in the Appendix.

on the House of Representatives because of the significance of standing committees and public projects in that chamber relative to the Senate.⁸ The data used here covers 350 of the 360 constituencies, with 10 pairs of constituencies in this set aggregated to the local government level, leaving 345 constituencies under study.⁹

For each of the 345 representatives I study, I have assembled biographies that outline their demographic and political characteristics (such as their party affiliation), their educational qualifications and work experience, and the results of their election in 2003.¹⁰ Table 1 provides descriptive statistics for the political constituencies we study. The vast majority of the politicians under study are men, with a mean age of 48, and 16 years of education (equivalent to a Bachelor's degree). The average population of a constituency is 370,000. This population is split, on average, between two local governments, which is the most basic administrative unit of government in Nigeria. The local nature of congressional politics implies that local public project provision is central to the success of a representative's time in office. National Assembly politicians do not face term limits, implying they have an ongoing incentive to provide public projects to bolster their re-election chances. A quarter of the politicians whom I study are already serving a second term.

The political competition faced by representatives is relatively heterogeneous across constituencies.¹¹ While the mean margin of victory is 0.33, there is substantial heterogeneity across the country. As Figure 1A shows, I observe constituencies subject to the full distribution of levels of political competition.¹² The heterogeneity in competition is not concentrated in one area of Nigeria. As Figure 1B indicates, there are large differences in competition between proximate constituencies. The average differential in margin of victory across neighboring constituencies is 20 percentage points. Thus, political incentives vary substantially across constituencies with similar geographic characteristics.

I also collected data on whether these representatives stood for and won the election held mid-way through 2007 after budgeting had been completed and implementation of projects begun. Election results were unavailable directly from INEC for 2007, and so I used the data published by Carr (2011) collected from the INEC web site as it was published in real time (and quickly taken down thereafter).

To further characterize a representative's constituency, I use the largest household survey ever undertaken

⁸Richard Fenno's famous 1973 study comparing the US Senate and House argued strongly that decision making inside the Senate is much less of a committee-dominated process than in the House. "In the House," Fenno writes, "the individual member's influence on chamber decisions is exerted, almost wholly, within and through his committees. Senators operate with no such constraints." A corollary of this is important for the current exercise. Fenno continues, "That is, a Senator's committee membership adds far less to his total potential for influence inside his chamber than a Representative's committee membership adds to his potential for influence in his chamber."

⁹I do not have evaluations of project outcomes for 10 constituencies, so I exclude these constituencies in the analysis. I describe the sampling of projects in the Appendix. The constituencies of 10 representatives are smaller than a local government area, the smallest administrative unit in my data on public projects. I therefore aggregate constituencies to their local government, leaving 345 federal constituencies to be studied. The characteristics and winning vote shares of the representatives who share local governments are very similar. I therefore allocate the constituency to that one of the two representatives who is first on the nominal roll of the election records. The core results of the paper are qualitatively unchanged if I include or exclude the projects located in local governments with multiple representation or use the second of the two representatives.

¹⁰The Appendix details the construction of these biographies. I collected election data from the Independent National Electoral Commission on the returns for each of the elections in 2003 (when the politicians I study were voted into power). This is data that was published as the official roll of the national elections.

¹¹My measure of political competition is 1 minus the margin of victory, defined as the winner's vote share minus the runner's up vote share. It represents the proximity of the runner up to the winner. Such a measure is used by Besley and Burgess (2002), Lee (2008), and Da Silveira and De Mello (2011).

¹²The distribution of political competition across constituencies in other countries is similarly diverse. For the US, the most recent election data is surprisingly similar to that of Nigeria. The average margin of victory for House elections in 2012 was 0.32, and constituency contests spanned the full distribution of political competition. For the UK, the margin of victory varies continuously between 0.01 and 0.58, with a mean of 0.19. There is substantial heterogeneity across neighboring constituencies, as in my data. Comparing this context to other developing country democracies, India is closer to the UK context, with the margin of victory spanning 0.01 to 0.61, with a mean of 0.12. Ethiopia, the second largest democracy in Africa after Nigeria, has an average margin of victory of 0.5 and varies between 0.01 and 0.96. (All figures are authors calculations based on election statistics from relevant election bodies).

in Nigeria, the 2005 Core Welfare Indicators Questionnaire (CWIQ). This was a cluster-randomized household survey run by Nigeria’s National Bureau of Statistics, representative at the local government level. The CWIQ survey was implemented at the end of 2005, at the same time as politicians were making delegation decisions in the first round of standing committees, and it therefore provides a baseline profile of the constituencies that I study. Using this survey, I create constituency-level averages for indicators of poverty, access to existing public projects and local economic dynamics. These will be used as controls in the core specifications and are described in detail in the Appendix.

Table 1 describes the constituencies under study. Nigeria’s citizens are generally poor, with a high proportion of the population in extreme or relative poverty. The average years of education is five years, equivalent to less than primary school completion. Only 48 percent of Nigerians have potable water, and the average number of hours of electricity available per day is 4.5. There are plenty of opportunities for public projects to have significant welfare impacts across these constituencies.

From the set of 360 politicians voted into power in 2003, the Committee on Selection chose 216 members for the 8 standing committees that cover the representative set of public projects on which I have independent evaluation data. For each of the relevant committees of the 5th National Assembly, I coded the membership of the committee using data from Nigerian Congress, a web site that provided details of all the House Committees set up in 2003. I also gained information on membership for the relevant period from secretaries of the appropriate committees. The committees I study are agriculture, education, environment, Federal Capital Territory (city building), health, housing, water, and women and youth. I then matched each representative to the committee membership records, and noted their position as member, chair, or vice-chair.¹³ The mean and median number of committees under study that a representative sits on is one. We now turn to those projects that the committees made decisions over.

3.2 Public projects

In 2006 and 2007, the 5th National Assembly legislated a Federal Budget of US\$12.7 billion and US\$15.1 billion respectively, or US\$27.8 billion in total over the two years. The focus in this paper is social sector capital projects, which account for roughly 35 percent of the total, or 73 percent of capital expenditures.

In both of these years, Nigeria’s Presidency undertook a unique monitoring and evaluation initiative that tracked the implementation of a representative sample of social sector projects. The ‘Overview of Public Expenditure in NEEDS’ (OPEN) monitoring initiative arose out of Nigeria’s receipt of debt relief in 2005. As a result of sweeping reforms across major organs of government (for an overview see Nkonjo-Iweala and Osafo-Kwaako, 2007), Nigeria received cancellation of its external debt to the tune of US\$18 billion from the Paris Club. At the federal level, the annual savings from debt interest were channeled into the social sectors (health, education, water etc.) that are the focus here. The Presidency viewed this as an opportunity to track the effectiveness of government expenditures, and so in 2006 and 2007 the Nigerian Government traced, at a project level, the use and impact of 10 percent of all Federal Government social sector expenditures.

¹³The US literature on standing committees I take as a guide for this study (Aghion et al (2005, 2009, 2010) and Cohen et al (2011)) conditions quantitative regression specifications on the ‘grade’ of the standing committee. Congressional committees are typically seen as having a hierarchy of importance, and the grade of the committee reflects the standing of the committee within that hierarchy. The rationale for following this practice is that in politically important committees, the dynamics of delegation may be distinct from other committees. I follow this practice by including a binary indicator of the grade of the committee under which the project falls in all specifications. This is a dummy that takes the value 1 if the committee is perceived to be of high political weight or 0 otherwise. I follow Ojeifo’s (2007) delineation of grade A (agriculture, water, education, housing, environment, Federal Capital Territory) and grade B (health and women and youth) committees. The core results are all qualitatively the same when I do not include this variable.

The OPEN projects were designed to be a representative set of government social sector expenditures, providing me with data on a representative sub-set of the federal social sector budget.¹⁴ Since I am investigating constituency politics, I am only interested in those projects whose benefits can be directly attributed to a specific constituency. I therefore exclude all projects from the full set of OPEN expenditures that have national or inter-jurisdictional scope. Examples of the excluded projects are those that require engagement with international organizations or that are implemented nationwide. This leaves us with a representative set of social sector projects that could be implemented within a constituency.

These projects are typically small-scale infrastructure projects (84 percent), with some procurement and other programmatic projects (16 percent). Descriptive statistics for the projects across constituencies are provided in the bottom half of Table 1. Note that constituencies typically have multiple projects, of multiple project types, covered by multiple sectoral committees. The projects are small in terms of budget, with a mean budget of US\$130,000, and complexity, with a mean of 29 percent on the index of complexity spanning the distribution of projects observed in the wider OPEN data set. They can be thought of as the ‘nuts and bolts’ of village economies. There is heterogeneity across project types (boreholes, buildings, dams, procurement, roads, financial projects, canals, training, advocacy, and research) in terms of the quality of output. I therefore control for project type fixed effects throughout the analysis.¹⁵

For each of the projects studied here, I have evaluations of how effectively they were implemented. Under the OPEN initiative, expert teams were sent to visit the selected projects and identify the extent to which they had been implemented as planned in the Federal Budget, and embodied in each project’s technical documentation. The Presidency contracted national and regional teams to undertake the monitoring process outside of the institutions of the civil service. Thus, the public sector projects were not evaluated by potentially biased civil servants, but rather by teams of independent engineers and civil society representatives. The engineers evaluating the projects were not those working on the project sites, and the civil society groups were recognized third sector organizations.

Evaluations of the OPEN process indicate it successfully achieved its aims (Eboh 2010, Dijkstra et al 2011). To ensure the accuracy of monitoring reports, the Presidency put in place a system of checks and balances. First, a centralized team of technocrats monitored the evaluation teams, providing them with training and opportunities for standardization of their methods at national conferences. Second, evaluators were asked to provide material, photographic, or video evidence to support their reports. Third, the national teams and Presidency performed random checks on evaluated sites, all of which were consistent with the findings of OPEN monitors.

The reports of OPEN evaluators describe the fate of projects budgeted for execution in the 2006 and 2007 federal budgets (Federal Government of Nigeria 2008a, 2009a). I hand-coded the material from all projects recorded in OPEN initiative reports.¹⁶ Taken together, the coverage of projects in the sample I study traces 7 percent of all Federal Government social sector expenditures in 2006/7 budget years,

¹⁴In the survey of bureaucrats I use in this paper, I was not able to undertake a survey at the decentralized organization to which electrification projects can be delegated. I therefore have to exclude all electrification projects for this analysis. This means that I have a representative set of delegatable projects for social sector projects that are not electrification infrastructure.

¹⁵The analysis at the core of this paper compares projects for which the relevant representative is on the relevant sectoral committee (‘treated projects’) and those for which they are not (‘control projects’). To ensure that these two sets of projects are not incomparable, I provide the normalized difference in means of available project characteristics for the two groups in Table A1. Following Imbens and Rubin (2015), I note that the differences are small, and not close to the boundary value of 0.25 that they suggest as a threshold. Projects implemented under distinctive legislative environments are therefore similar on observables.

¹⁶The OPEN reports comprised of roughly 21,000 evaluation reports, photo and video files, and recipient testimonies. I personally reviewed each of these documents and entered the appropriate evaluations into a single database according to a set of specified benchmarks agreed by the OPEN engineers and civil society teams.

corresponding to 3,008 projects from 54 organizations, with an aggregate budget of around US\$395 million.¹⁷

The OPEN evaluation teams coded: (i) whether the project had started; (ii) its stage of completion; (iii) and in a subset of cases, the quality of the inputs and work. The main outcome variable is a continuous measure, from zero to one, of project completion rates: zero refers to the project never having been started, one corresponds to the project being completed as specified in the original project description, and intermediate scores reflect part completion.

Table 1 provides a summary of a key dependant variable in the analysis, the proportion completion rate, across constituencies. Roughly 40 percent of projects are never started, while a third are completed.¹⁸ Conditional on being started, therefore, a project has a 53 percent chance of being completed.

To gain a sense of the technical specifications of the projects we study, I hand-coded data on project-level characteristics such as the budget allocated to the project, whether it was a rehabilitation project, and a brief summary of its technical specifications from project documentation. I also coded which of 10 project types the projects fell into, with categories in both construction (water wells, buildings, and so on) and non-construction fields (procurement, financial projects, and so on). The project technical specifications were used to form engineer-approved measures of the technical complexity of each project and informational characteristics, in the sense of whether centralized or decentralized tiers had an informational advantage in project delivery. The Appendix: (i) details the construction of these indices; and, (ii) describes checks I put in place, using multiple engineers, to establish the validity of these complexity measures.

3.3 Bureaucrats

A bureaucrat in this paper is a civil servant of the Federal Government of Nigeria. Each of the 3,008 projects I study in this paper were implemented by one of 54 bureaucratic organizations. To gain measures of the interactions between politicians and bureaucrats, I undertook surveys of a representative sample of roughly 10 percent of the staff at each of the organizations I study.¹⁹ As part of this survey, I collected some of the first systematic measurements of interactions between politicians and bureaucrats.²⁰

Each of the officers I surveyed was asked the following question, “Rate the influence you think [members of the National Assembly] have on the success of a typical project implemented by your organization”, where responses were categorical and divided into ‘Most influence’, ‘Significant influence’, ‘Some influence’,

¹⁷I consider projects traced under the OPEN initiative that were approved in either the 2006 or 2007 federal budgets. For projects funded in the 2006 (2007) federal budget, monitoring teams visited the relevant project sites around June 2007 (2008). Therefore, project implementers were given roughly 18 months from the time the project was centrally approved until when it could be used by the community. All the projects I study had twelve month completion schedules, so that even accounting for any delay in the disbursement of funds, it is feasible for these projects to be completed by the time of the monitoring survey.

¹⁸It is not possible for me to distinguish between whether projects were not started due to active or passive waste (Bandiera et al, 2009). Rather, the focus of this paper is on whether the decisions and actions of politicians can overcome bureaucratic inefficiency, whatever its nature.

¹⁹There is an emerging literature in political science on informal politics, such as the research described in Helmke and Levitsky (2006). This paper adds to that literature by providing large-scale and detailed measures of informal political pressures, embedded in a model that relates those measures to output.

²⁰Survey data on politician interaction with bureaucrats around project implementation is rare. The closest numbers I have for comparison to this paper come from the World Bank’s ‘Public Officials’ Surveys’ (Manning et al, 2000). These surveys covered 16 countries, and there is significant heterogeneity in the average level of bureaucrat’s perception of politicians’ interference. Evidence from Bangladesh shows that when politicians stop interfering in day-to-day decisions, the perception of corruption in that organization will fall by 31 percent (Mukherjee et al, 2001). A similar impact of political interference was found for Bolivia (Manning et al, 2000). In Guyana, 42 percent of officials interviewed stated that politicians’ interference is frequently or very frequently a “significant problem” (Gokcekus et al, 2001). Thus, whilst these figures reflect varying contexts and survey questions, they are indicative that the magnitude of the issues studied here are of widespread significance.

‘Less influence’ and ‘Least influence’. For each bureaucrat, I determine a binary variable that takes the value 1 if they responded ‘Most influence’ or ‘Significant influence’, and 0 otherwise. On average, roughly 50 percent of officials state that politicians have significant or most influence over the projects they implement. There is significant heterogeneity across organizations, with only 26 percent of officials stating such influence at the least influenced organization and 84 percent stating such influence at the most influenced.

To estimate the nature of the interventions various parties are making I also asked bureaucrats, “Think about recent projects and/or programmes you worked on for this organisation. In what proportion of the projects have the following parties intervened in the implementation of a project?”, with the parties being ‘Member(s) of the National Assembly’, ‘Member(s) of the relevant central ministry’, ‘Member(s) of the state assembly’, ‘Governor of the state in which the project is being implemented’, ‘State commissioner(s)’, ‘Local government chairman/men’, and ‘Community or religious group(s)’. Similarly, I asked bureaucrats to “Think about recent projects and/or programs you worked on for this organization. How often, if at all, do you *personally* engage with [the parties outlined above] in the work that you do?” [italics in original].

4 Empirics

To assess the impacts of formal power over the bureaucracy, I exploit a congressional procedure that provides exogenous delegation power to a subset of politicians. Membership of a sectoral standing committee in the Nigerian House of Representatives provides its members with significantly greater power to influence the implementation of projects *in that sector* than non-members. For each project, I construct a membership dummy that takes the value 1 if the project is in a constituency in which the representative is on the sectoral committee of the same sector as the project. We can then run a regression of the following form:

$$projectoutcome_{ic} = \gamma_1 membership_{ic} + \gamma_2 PC_i + \gamma_3 CC_c + \lambda_i + \epsilon_{ic} \quad (1)$$

where I estimate for the i th project implemented in constituency c . $projectoutcome_{ic}$ is the proportion completed of the project, or a corresponding binary variable, such as whether it has initiated (i.e. the proportion completed is greater than 0), or a dummy variable that takes the value 1 if the project is of sufficient quality and 0 otherwise; $membership_{ic}$ is a dummy variable indicating whether the congressperson of the constituency in which the project is implemented is a member of the sectoral committee relevant to the project; project controls (PC_i) are the key project characteristics described above; constituency controls (CC_c) are the key socio-economic characteristics of the constituency described above; and, project type fixed effects (λ_i) absorb 10 project type- and 7 sector-level effects.

Whilst we would expect such membership to increase the influence of a representative over public projects in that sector, causal identification is hindered by the concern that factors that determine committee membership (such as originating from a powerful state) may also increase the level and quality of project implementation. To alleviate the concern that $membership_{ic}$ is driven by unobserved factors that may also impact $projectoutcome_{ic}$, I instrument $membership_{ic}$ in a first stage using the choice of career sector of a politician:

$$membership_{ic} = \theta_1 relevantexperience_{ic} + \theta_2 PC_i + \theta_3 CC_c + \lambda_i + \epsilon_{ic} \quad (2)$$

where I estimate for the i th project implemented in constituency c . $relevantexperience_{ic}$ is a dummy variable indicating whether the congressperson of the constituency in which the project is implemented has relevant qualifications or experience to be eligible as a member of the sectoral committee relevant to the project; other variables are defined as above.

I begin by examining the validity of the assumption that committee membership by experience is unrelated to factors that may affect implementation. I then turn to how membership impacts on projects in the corresponding sector and constituency, using previous qualifications or experience as an instrument for membership. Finally, I look at the consequences of memberships on the political equilibrium of the bureaucracy.

4.1 Determinants of Committee Membership

For the above strategy to be valid, I make the assumption that those representatives who are granted membership of a sectoral committee based on pre-existing qualifications or expertise are members for reasons exogenous to conditions affecting project implementation. Particularly, sector experience should not be systematically correlated with constituency-level features that may significantly influence project implementation.

Both the politician members of the Committee on Selection and their administrative secretaries state that selection decisions are based on the geo-political factors and qualifications I have described in section 2.1.²¹ To empirically test these claims, I can assess the factors that determine the sector/s in which a politician has been selected to serve. Table A2 provides motivating evidence that politicians are similar across committees. It reports regressions of characteristics of politicians and their constituencies on dummies for each of the sectoral committees. I find no evidence of sorting across committees on politicians' observed characteristics, such as their age, sex, years of education, the political competition they face or the extent of poverty in their constituency.

A more formal test of which observable characteristics explain selection into committee membership is reported in Table A3. I estimate a seemingly unrelated regression (SUR) model across indicators of committee membership. For each constituency-level regression in the SUR system, the dependent variable is a binary variable reflecting whether a representative is a member of the committee for the named sector. I regress these indicator variables on the politician and constituency controls described above, and a series of dummy variables that indicate the politician's geo-political region. I then display the coefficients for those variables relevant to all the sectors.

Table A3 presents the results and indicates that there is strong evidence that qualifications play the major role in determining which politicians are allocated to a particular committee. Though the coefficients on relevant qualifications are not 1, they are large and highly significant. The fact that they are large indicates that relevant qualifications are a substantial predictor of committee membership. Conditioning on the fact that more educated individuals serve on the education committee, and more women serve on the women and youth committee, there is little evidence of sorting across committees on observable characteristics of individuals or constituencies. There is also little correlation in error structure, implying

²¹For example, the vice chairman of the Committee on Selection states, as reported in This Day newspaper, "The Selection Committee ... considered cognate experience, areas of specialization and zonal representation in order to ensure that the chairman and vice chairman of a committee do not come from the same geopolitical zone." (This Day, 2007)

there is no evidence of underlying unobservables selecting politicians across sectors. There is evidence that members of the agriculture committee face more significant political competition in their constituencies. It is therefore important for us to be able to instrument for any remaining concerns using pre-existing qualifications. I will also check the robustness of the core results for this deviation from the general pattern that qualifications are the dominant determinant of committee membership.

One concern is that constituency characteristics indirectly influence committee membership by determining the sector of a representative's qualifications and experience.²² For example, a politician from an arid region of Nigeria may enter into the water sector. It may then be more challenging to implement water projects in that region, thus linking sector of experience and project implementation.

To investigate this, Table A4 investigates the determinants of a politician's sector of qualifications and experience by estimating a SUR model of sector expertise on individual and constituency characteristics. I create dummies for each of the sectors into which a politician could have specialized. These take the value 1 when the politician has specialized in that sector, and zero otherwise. To represent the past constituency characteristics on which politicians made their career decisions, I use previous survey data collected at the time most politicians were making their career choices. The mean politician is 48 years of age in 2006, implying that they made primary career decisions during the late 1970s. In 1980, Nigeria undertook its first systematic household survey, the National Integrated Survey of Households (NISH). The 1980 variables are strong predictors of contemporary constituency characteristics, providing a validation of both sets of household data, collected a quarter of a century apart. I therefore coded state-level averages from the NISH survey for the variables closest to those in the core analysis and associated them with the corresponding politician in the data set.²³ Table A4 presents the results of how constituency characteristics in 1980 impacted on the sector decisions of the politicians I study. It suggests that there is almost no evidence that individual and constituency characteristics determined the sector into which a politician specialized. Almost none of the coefficients are significant at the usual levels.²⁴

Another quantitative check comes from comparison between the Senate and House. If constituency-level characteristics determined the sectors into which representatives selected, I should find that senators from the same areas have selected into the same sectors. I find this is rare. Only 13 percent of representatives are on a committee of the same sector as their senator. For any particular committee, that figure is at most 3 percent. This is consistent with the fact that within a state, House representatives specialize into distinctive sectors.

The totality of the evidence points towards the House Selection Committee determining committee membership based on factors that are exogenous to constituency-level characteristics that might have significant impacts on project implementation or the choice of organization delivering public projects.²⁵ Thus, as Payne (2001) finds substantial evidence for arbitrariness in the makeup of US congressional

²²As complementary to the formal tests of this, I note that Nigeria only became a democracy in 1999, such that almost all of the qualifications on which the Selection Committee made their decisions were gained well before the standing orders were even conceptualized. When they made their career decisions, politicians would not have known how the House standing orders would be designed or perhaps whether Nigeria would have a National Assembly at all.

²³Where new administrative units have formed, I matched the politician to the data that most closely corresponded to their constituency.

²⁴I have also undertaken this analysis with the contemporary CUIQ survey and find similar results to those in Table A4 in that no pattern of career choice determination is observable. This is indicative that voters are not choosing politicians to represent them that have qualifications in their sector of greatest need.

²⁵To what extent would unobservable factors not picked up in the tests be able to play a significant role in the analysis? I can explore the potential for unobservable factors to reduce the estimates in this section to 0 using the correction for unobserved heterogeneity described by Altonji et al (2005) and Oster (2013). Based on an intended R-squared of 0.8, I find that explanatory variation in unobserved factors would have to be roughly 4 times as large as the observed variation in the controls. Given that we see almost no evidence of sorting in the observables, this provides additional assurance that membership is a valid instrument in this setting.

committees, I find a similar phenomenon in Nigeria with respect to local political conditions. Relative to local factors that determine project implementation, the granting of committee membership for a particular sector is an arbitrary allocation of additional power to delegate public projects within that sector. Having identified a feature of the chain of public project implementation that is plausibly exogenous, I can observe what committee members do with the projects under their remit versus projects in the constituencies of non-members.

Predicated on the discussion above, we should find that pre-existing qualifications provide a very strong predictor of committee membership, and are thus a strong first-stage to an instrumental variables strategy. Table 2 presents the first-stage results on how experience in a relevant sector determines the likelihood of becoming a member of the corresponding legislative committee. The dependent variable in all specifications is a binary variable reflecting whether a representative is a member of the committee in the sector in which they have most experience. The analysis is at the representative-committee level, such that there are 345 representatives times 8 sectors equals 2,760 units of observation, each indicating whether the representative in question is a member of a sectoral committee and whether they have the appropriate experience.

Column 1 of Table 2 implies that unconditionally, pre-existing experience increases the probability of membership by 0.62, corresponding to a baseline of 68 percent of politicians qualified in a sector being on the relevant committee. This effect has a p-value of 0 rounded to 3 significant figures. Taking account of sectoral differences in Column 2, constituency characteristics in Column 3, or for potential correlations between errors in the same sector in Column 4 does little to affect the point estimate.

Since equation (1) will be at the project level, I can therefore estimate (2) to test the first-stage of the instrumental variables strategy. Columns 5 and 6 of Table 2 presents the first-stage results on how experience in a relevant sector determines the likelihood of becoming a member of the corresponding legislative committee with and without project controls. In Column 5, we estimate the same regression as in Column 3, but with the unit of observation being the project. Once again, the coefficient is substantial, 0.6, and significant at the 1% level. Including project controls does not alter the coefficient or standard error.

Together, this evidence points towards pre-existing qualifications being an important and potentially exogenous determinant of committee membership. Based on this assumption, we now turn to the impact of formal authority on project implementation.

4.2 Consequences of Formal Power Over the Bureaucracy

To assess the consequences of formal power over the bureaucracy on project implementation, we undertake an instrumental variables regression of the following form:

$$projectoutcome_{icn} = \gamma_1 \widehat{membership}_{ic} + \gamma_2 PC_i + \gamma_3 CC_c + \lambda_j + \epsilon_{icn} \quad (3)$$

where I again estimate for the i th project implemented in constituency c , and $\widehat{membership}$ is the instrumented projection of the dummy variable from regression (2) that takes the value 1 if membership is due to appropriate qualifications and experience, and zero otherwise; project controls (PC_{ij}) are key project characteristics; constituency controls (CC_{ij}) are key socio-economic characteristics of the constituency; and, project type fixed effects (λ_j) absorb project type level effects.

Table 3 presents the results of this regression across a range of project outcomes of interest. Throughout the first stage F-statistic is extremely high, echoing the high predictability of committee membership by related experience and qualifications. In Column 1 of Table 3, we see that formal power does increase the total level of proportion completed, by 9 percentage points, or 18%. The corresponding coefficients are significant at the 5% level. Column 2 of Table 3 indicates that projects are more likely to be initiated, with the corresponding coefficient significant at the 5% level. However, the coefficient on the binary variable in Column 3 that indicates whether the project is completed or not is substantially smaller, and insignificant at the usual levels. It would seem that politicians use their formal power to nudge projects along, or have them initiated, but the evidence that they assure they are completed is much weaker.

The impact on the quality of formal power of politicians on public projects is shown in Column 4 of Table 3. For 1,369 of the 3,008 projects, we have data on the quality of implementation. The variable in the regression described in Column 4 is a dummy that takes the value 1 if the project is deemed of satisfactory quality by the OPEN auditors, and 0 otherwise. Formal power decreases the quality of project implementation by 12 percentage points, a value significant at the 5% level. Interacting this dummy with the proportion completed variable used in Column 1 provides us with a ‘quality-adjusted completion rate’ in Column 5, where we see the overall impact of politician’s power is to marginally reduce the quality of bureaucratic implementation.

I present a range of robustness checks in Table A5 in the Appendix, taking Column 1 of Table 3 as the baseline result. I begin with the concern that projects dealt within the same bureaucratic file may have correlated outcomes. Clustering by which file the project was likely dealt with in does not impact on the qualitative result. If we cluster at the federal constituency or organization level, the results continue to hold at the 10% level. Irrespective of the fact that we have an instrument, I noted the concern in section 4.1 that political competition is affecting membership of the agriculture committee, and thus Column 5 presents results of the baseline specification without projects under the influence of agriculture committee members. The coefficient is unchanged and significant at the 10% level. If we restrict the analysis to ‘high grade’ committees only, corresponding to those committees within the National Assembly demarcated as of particular political importance, the result strengthens. Finally, we see the effect is more precisely estimated for constituencies that have above mean political competition, which is consistent with the notion that political interference in bureaucratic decisions would be larger when the stakes are higher.

How do politicians affect the change in project implementation? Table 4 investigates potential avenues of influence. Since House committee members negotiate with executive organizations on the form of the budget, Columns 1 and 2 assess the number and total value of projects respectively in a constituency. The analysis in these columns is at the constituency level, and therefore controls for constituency but not project controls. We see little evidence that committee membership increases the scale or financial value of projects within a constituency, with both coefficients being smaller and indistinguishable from zero at the usual levels. Reverting back to the project-level analysis, Columns 3 and 4 present the individual project budgets and their complexity as assessed by independent engineers. Once again the coefficients are small and close to zero, implying that projects for which representatives are on a committee do not differ systematically from those that are not. This is consistent with the evidence presented in Table A1 and discussed above.

Where we do see evidence of influence is in the implementation process. For each project, I coded what proportion of funds were warranted (released to be used by implementing organizations) in the first two quarters of the fiscal year (which in Nigeria coincides with the calendar year). The greater the amount warranted in the first two quarters, the more funds are available early on in the project cycle. It seems that membership of a committee coincides with an 8 percentage point increase in the proportion of funds

warranted in the first half of the year. The coefficient has a p-value of 0.03 and corresponds to a 13 percent increase in fund availability. The size of the coefficient is close to the percentage point increase in completion in Column 1 of Table 4. The results are consistent with politicians pushing bureaucrats to prioritise the release funds to their projects in their constituency.

4.3 Consequences of Formal Power for the Political Equilibrium

Sections 4.1 and 4.2 provide evidence that the implementation of public projects across the Nigerian government is a function of the formal power wielded by politicians. I now turn to how formal power impacts the political environment surrounding the implementation of public projects.

Table 5 presents estimates of the impacts of formal power on informal engagements with the bureaucrats who implement the public projects we study. The analysis continues to be at the project level, and the dependent variable is now the proportion of public officials at the organization implementing the project that state intervention or engagement with members of the political or bureaucratic elites. Specifically, we asked on what proportion of recent projects that the official had worked on, “have the following parties intervened in the implementation of the project” and “How often, if at all, do you *personally* engage with members of the following groups in the work that you do?” [italics in original]. Since the projects are a representative set of federally funded small-scale infrastructure, they provide an appropriate weighting across organizations of the intensity of interaction by politicians.

Across Table 5, we see evidence that providing exogenous formal power to representatives changes the implementation environment by shifting the interventions of a range of actors related to project completion. We see that intervention by political actors reduces (Column 1) as does personal engagement by politicians with bureaucrats (Column 2), consistent with the idea that the use of formal power reduces the need for direct intervention or engagement. The absolute reduction in reported engagement is largest at the level of the National Assembly (Column 3), as we would expect, but also reduces the intervention of state politicians (Column 4), who are perhaps acting on behalf of House representatives. On the executive side, intervention increases, particularly by the Governor (Column 8) and State Commissioner (Column 9). As one might expect, as a particular politician becomes more powerful within the state, high-ranking bureaucrats within that state will be eager to serve their interests. The results of Table 5 reflect the ‘general equilibrium effects’ of committee membership. By shifting the incentives of one of the most powerful elites in a polity, the actions of many other key political and bureaucratic elites are also shifted.

If the political environment is shifting overall, how does this change the pressure on bureaucrats to undertake corrupt acts that may benefit politicians? A natural question is whether politicians are using their formal powers to increase funding for political campaigns.

To elicit information on perceptions of corruption, we began by discussing vignettes with bureaucrats, then made those scenarios closer to the bureaucrat’s actual situation, and finally asked individuals about their own observations and experiences of corruption. We asked on what proportion of recent projects that the official had worked on, did they observe ‘others breaking service rules for their own benefit’. On average, officials stated that on 38% of projects such observations of corrupt practice had been made. We aggregate this to the organization level to construct the proportion of projects bureaucrats report having observed corrupt practices on. Column 1 of Table 6 presents a variation of equation (3) in which the dependant variable is this proxy of organization-level corruption. We see that formal power increases the likelihood of observed corruption by 1.36 percentage points, or 4%.

I also asked whether officials had themselves been put under pressure to: (i) change the project location; (ii) change project specifications; (iii) help select particular contractors/suppliers/consultants; (iv) divert some of the funds. Aggregating responses into an organizational average, officials stated that they had experienced such pressures on 20% of projects. In Column 2 we repeat the analysis in Column 1 but with this aggregated measure of corruption. Validating the result in Column 1, we see evidence that corruption rises in response to formal authority using this alternative measure. Committee membership leads to a 1.7 percentage point increase in the extent of corruption pressure, or 9%.

On which margins does corruption increase? Columns 3 through 6 undertake regressions of the form of equation (3) with each of the above margins of corruption as a dependant variable. We do not find evidence of pressure to change project locations (Column 3). However, we find strong evidence of pressure to change the design of the project (Column 4) and to select a particular contractor (Column 5). These results are consistent with the result in Table 3 that quality is being sacrificed, and indicate this occurs because the technocratically determined design is altered or there is pressure to choose contractors for reasons other than implementation capacity. A 17% increase in reported pressure on bureaucrats to select particular contractors is consistent with the channeling of public resources to private actors who can support political campaigns. Reinforcing this interpretation, Column 6 provides evidence that project funds are being diverted when a politician has formal power over a project.

Speculating a little on the general pattern of results, they are consistent with the notion that project initiation and progression are mechanisms through which project funds are made available by central state finance institutions to implementing bureaucrats. Once funds are with these individual officials, they can be pressured to divert funds to private actors aligned with a representative's political ambitions. This would explain why we observe stronger results on initiation and progression of projects rather than completion, and why a key avenue of influence is on the release of funds. These funds are then diverted through private actors to facilitate political campaigning at the cost of project quality.

Does this politicization of project implementation result in the electoral success of committee members? A final piece of analysis relevant to understanding how formal power impacts the political equilibrium is to understand its impact on the subsequent election. After the budgeting and implementation design cycle had completed, politicians prepared for and contested elections in 2007. Of the 360 representatives in the 2003 to 2007 House, 165 stood for re-election in 2007, and of these, 109 won. On the restricted sample of constituencies for which the representative stood for re-election, we can use the same data structure and instrumental variables strategy of previous regressions to assess the extent to which formal power over projects improves election probabilities. The dependant variable is now a dummy variable that takes the value 1 if the candidate won in 2007 and 0 otherwise, with the interpretation of the coefficient on committee membership being the increase in probability of electoral success from public projects in a constituency being managed by a committee on which the corresponding representative is a member.

Column 1 of Table 7 indicates that membership increases the probability of winning the next election by 15 percentage points, with a corresponding p-value of 0.02. On a baseline probability of electoral success of 0.61, committee membership bestows a 25% increase in the probability of success. Column 2 indicates that clustering at the federal constituency level reduces the statistical significance of the coefficient to the 10% level. Together with the results in previous tables, it would seem that committee membership enables representatives to increase the quantity of public good implementation and potentially use project funds siphoned off to chosen contractors for campaigning, leading to a higher probability of electoral success in the subsequent election. That the reduction in quality does not counteract the increased level of provision could indicate that citizens are satisfied with increased project implementation at lower quality

or that they are compensated outside of the formal system of government.

5 Discussion and conclusions

This paper aims to provide evidence on how politicians get bureaucrats to deliver public projects that might win them votes. It establishes the extent to which politicians influence the productivity of the bureaucracy by using the formal powers gifted to them by membership of a legislative committee. Using data from across the Federal Government of Nigeria, I find that committee membership increases project initiation and progress, but has weaker impacts on completion, and reduces quality.

These findings provide some of the first evidence on the consequences of political interference in the bureaucracy. A growing literature identifies the positive impacts of political competition on government performance (Foster and Rosenzweig, 2004; Besley et al, 2010; Ferraz and Finan, 2011). However, the mechanisms through which political competition affects bureaucratic implementation has largely remained a puzzle.

Using data on each major stage of the project cycle, I show that projects in committee member constituencies receive funds earlier in the project cycle, and bureaucrats implementing the projects report greater pressure to change project specifications and hire specific contractors. This is consistent with politicians using project implementation as a source of funds for political campaigning.

Understanding the determinants of the resource distribution across government, and the drivers of public project completion, is essential for our ability to improve government effectiveness. The findings of this paper suggest that politicians have the capability to enhance bureaucratic action along the margins that serve their political interests. The extent to which those margins are aligned with social welfare will likely be determined by the extent to which citizens reward politicians for their delivery. If Nigerian citizens simply want a greater quantity of public projects, rather than their completion or quality, we find evidence of their delivery. However, if the quality of public projects is hard to measure by citizens despite its value, political pressure through formal channels may be at odds with wider benefits to society.

Assessing politicians' interactions with bureaucrats allows us to better understand the incentives under which bureaucrats work.²⁶ I provide some of the first quantitative evidence of the scale of political interference in the bureaucracy. The evidence from Nigeria is that politicians personally engage with bureaucrats on over 14 percent of public projects. This paper has shown how changes in the formal powers of a politician can shift the informal incentives of bureaucrats working in a constituency across the range of political and bureaucratic stakeholders she works with. There is substantial scope for more clearly outlining the nature and intensity of politicians' interactions with the bureaucracy. Along which margins do these interactions have significant impacts on government output or more limited impacts? What are the institutions in developing countries that shield bureaucrats from formal and informal political pressure?

That question can partly be addressed by identifying the features of organizations within the public sector that manage the relationship between politicians and bureaucrats. Political oversight of the bureaucracy in itself may be a necessary, but not sufficient, condition for improved public project delivery.

²⁶Incentives for bureaucrats instituted by politicians can be said to be 'top-down' in nature. The literature on 'bottom-up' incentives for bureaucrats could be seen as a natural counterpart, for which there is a more extensive literature. Examples of this literature are Besley and Burgess (2002) which documents the benefits of media development on Indian local government performance, Reinikka and Svensson (2005), which studies a newspaper campaign that empowered Ugandan citizens to monitor local officials, and Olken (2007), which contrasted the impacts of community and audit monitoring efforts on the quality of rural road implementation in Indonesia. A related literature to that studied in this paper shows how management practices impact on bureaucrats' incentives and behavior (Rasul and Rogger, 2013).

When and how political oversight improves the way government works has been at the research frontier for many years. New efforts to collect novel data, like that used in this paper, will allow us to answer those questions with increasing clarity and depth. Given the key role politicians and bureaucrats play in the public service, their interactions will be central to this analysis.

Data Appendix

A.1 Sample of projects

The Overview of Public Expenditure in NEEDS (OPEN) monitoring and evaluation process forms the basis of the sample of projects selected for this study. The OPEN evaluation was set up in 2006 and “was adopted as the mechanism to monitor and evaluate public expenditure” (Federal Government of Nigeria, 2009a). The scheme intended to monitor the implementation of projects to be funded by debt relief savings and evaluate their outcomes. The evaluation reports from the first two rounds of this process act as the basis for the data used in this paper.

The President created an ‘OPEN office’ with a Presidential mandate to track and report on the expenditure of the debt relief gains. Rather than set up a parallel organization to spend debt relief savings, as had been done elsewhere, OPEN was seen as an opportunity to “find out where the most significant barriers to public expenditure lay” (Federal Government of Nigeria, 2007a). Thus, it was decided to channel the funds through standard institutions of government: the ministries, departments, and agencies of the Federal Government. This enables us to use the OPEN evaluation as a window into the workings of Nigeria’s government.

As background, it is worth understanding a little about the context in which the OPEN initiative was started. In 1999, Nigeria transitioned to a democratic government under President Olusegun Obasanjo after more than a decade and a half of military dictatorship. The new administration inherited a huge external debt portfolio.²⁷ Partially motivated by the promise of debt relief, the newly-elected President began his second term aiming to strengthen Nigeria’s economic position. A fiscal rule was introduced to de-link public expenditures from volatility in oil-revenues, state institutions were privatized, and a number of sectors deregulated to encourage private sector participation. Based on the thrust of the government’s reform agenda, the Paris Club granted Nigeria debt relief of about US\$18billion in September 2005. This translated to annual debt-service savings of roughly US\$1billion, US\$750 million of which would accrue to the Federal Government. The OPEN evaluation reports evaluate the effectiveness of the federal portion of these savings.

The President directed that debt relief expenditures go to “core projects and programs in the social sector” (Federal Government of Nigeria, 2007a). A comparison of the distribution of funds in the OPEN program with that in the Federal Government budget as a whole indicates that the sample is representative across sectors. The OPEN office helped direct funds to a relatively representative sample of the nation’s small-scale social-sector projects. All were suppose to take roughly 12 months to complete. This implies they are not representative of the entire budget, which includes much recurrent expenditure (salaries, materials and supplies, and so on) and the funding of large scale dams, oil refineries and so on. However, they are representative of social-sector capital expenditures.

In the survey of bureaucrats I use in this paper, I was not able to undertake a survey at the decentralized organization to which electrification projects can be delegated. I therefore have to exclude all

²⁷Nigeria’s Debt Management Office estimated that the nation owed external creditors US\$36billion at the end of 2004, which was roughly twice the value of annual government expenditures (Debt Management Office, 2005).

electrification projects for this analysis.

I hand-coded the information from the 21,000 documents and project files that made up the monitoring and evaluation report of the OPEN initiative for 2006/7. This makes up the set of representative evaluations of Federal Government public projects on which I draw.

From this representative set, I defined a dummy variable that indicated whether a project was inherently national or multi-jurisdictional (across many states for example) in nature, or whether the majority of its benefits could be designated as accruing to a single constituency. The analysis in this paper focuses on projects in the latter case. A project was excluded if: (i) it contains components that require access to international policy inputs; (ii) it contains components that require engagement with stakeholders at the national or international level; or, (iii) the scope of the project crosses multiple constituencies.

An example of a project that was excluded is from the Ministry of Women Affairs. It was entered into the budget as ‘Development and production of 2000 copies of a National Gender Policy (NGP) and 2000 copies of its Strategic Implementation Framework for the sustenance of gender equality perspective in all sectors’. This project requires international-level technical assistance, inputs from multiple sectors, and national-level engagement with international donors and Nigerian stakeholders. Such a project’s benefits cannot be attributed to a single constituency, but rather benefits the nation as a whole. On the other hand, the benefits of a borehole to be provided in a specific constituency in Borno state can clearly be assigned to citizens of that constituency.

A.2 Politician characteristics

To effectively characterize the politicians studied in this paper, I constructed biographies of each of the 360 representatives in the 5th (2003-7) National Assembly. I undertook the following process.

I drew the list of winning politicians from the Independent National Electoral Commission’s ‘Compendium of Results of the 2003 General Elections: Vol.1: Presidential and National Assembly Elections’. Where there were electoral tribunals, I followed the judicial process for each and noted where there was a change of representative and the date on which the successful petitioner took up office. I also used National Assembly web site records to identify any deaths amongst the congresspersons. This defined a complete set of representatives relevant to the 2006 and 2007 budget processes.

For each politician, I then hand-coded basic demographic information (sex, age and education) from the National Assembly’s ‘Nigeria Legislature 1861-2011: Compendium of Members and Officials’. In the very small number of places where age was missing, I either confirmed this using other sources or replaced their age with the mean of all representatives and include a dummy indicating that age was missing in all specifications that include representative age.

I then built up a profile of the career of each representative and coded their relevant experience into the sectors of the standing committees in the data. Only substantive experience in a sector over a sustained period of time was counted as relevant experience. To give a brief overview of how I sorted candidates into sectors, those with a training in finance or who had been a financial officer at a large private firm or public organization were coded as having experience in finance. Doctors or other health professionals such as nurses, pharmacists, or affiliates of medical institutions were coded as having experience in health. Electrical or other relevant engineers and those involved in contracting power facilities were coded as having experience in the power sector. Mechanical engineers or those with experience in river basins management were coded as having experience in the water sector. Farmers and those involved in the agro-processing industry were coded as having experience in the agriculture sector. Women and those

who have engaged with gender-focused organizations were coded as having experience in the women's sector. Civil engineers or those with experience in building large-scale urban infrastructure were coded as having experience relevant to the Committee on the Federal Capital Territory. Anyone who had qualifications in environmental management or worked for an organization with experience implementing environmental projects was coded as having experience relevant to the environment sector. Architects and those involved in small-scale urban development projects were coded as having experience in the housing sector.

The information for the biographies came first from the National Assembly web site, and where relevant from the publication, 'Nigeria's 4th Republic Handbook 1999-2003'. Where these did not yield sufficient detail, a comprehensive search of the AllAfrica archive of all newspaper articles from major Nigerian newspapers was used to collect biographical information. Finally, when this was insufficient, simple Google searches yielded biographical details. In roughly 15 percent of cases this did not yield an appropriate biography of the individual. In such cases, I took the most conservative approach and coded that individual as having no relevant experience.

I then used education regulations from Nigeria's education sector to define years of education variables from the collection of qualifications that each representative had earned. For the very small number of representatives for which educational qualifications were not available, I replaced their years of education with the mean of all other representatives and include a dummy indicating that years of education is missing in all specifications that include representative years of education.

A.3 Process of defining committee membership

The Selection Committee of the House of Representatives selects those politicians they deem fit to be members of the standing committees. Section XVII of the House Standing Orders states that, "There shall be a Committee to be known as the Committee on Selection appointed at the commencement of every Assembly ... The Committee's jurisdiction shall cover nominating Members to serve on Standing and Special Committees" amongst other duties.

The Selection Committee is required to select committee members such that each committee is representative of Nigeria in terms of its six geo-political regions (North Central, North East, North West, South East, South South, South Central) and the strength of the parties in the House. For example, Order XIV of the House Standing Orders states, "Members of Committees shall be nominated by the various political parties and appointed by the Committee on Selection in accordance with their strength in the House."

The Selection Committee has a guiding principle to match representative's qualifications with the committees on which they sit. For example, the vice chairman of the Committee on Selection states, as reported in *This Day* newspaper, "The Selection Committee ... considered cognate experience, areas of specialization and zonal representation in order to ensure that the chairman and vice chairman of a committee do not come from the same geopolitical zone." (*This Day*, 2007).

For each committee, the House Standing Orders outline the list of topics to which the House delegates oversight responsibility. For example, the Health Committee's jurisdiction covers specialist hospitals, teaching hospitals, medical research, federal medical centers, and a host of other topics including 'health matters generally'. The Selection Committee therefore determine, for each committee, those members who have relevant qualifications to provide appropriate oversight of the sector. They then choose individuals from this set within each geo-political zone, and within the appropriate proportions of the relative weights of the parties in the House.

Since I have only coded the committees relevant to the social sectors, I observe some politicians sitting on no committees. They are likely to sit on a committee outside of the social sectors. Some representatives serve on multiple committees, and the maximum number of committees a representative sits on is 4. To understand how this reconciles with the need for sectoral knowledge, some politicians have qualifications/experience in multiple sectors. For example, they may be a qualified doctor who is a professor of medicine at a university. This individual would likely serve on both the health and education committees. Where there are small changes to the committees over time, I use the membership relevant to the 2006 and 2007 budgets.

As was seen in section 4.1 of the main text, there is strong evidence that the Selection Committee does this based on the three factors of geo-political and party representation and relevant qualifications and experience. In a number of fora, members of the Selection Committee have stated that once they must find a doctor within the North-East zone from the ruling party, there is typically very little room for other factors to play a role. This was confirmed by interviews with the secretaries of the standing committees and with external academics.

A.4 Constituency controls

To control for a range of constituency-level characteristics, I use data from the largest household survey ever undertaken in Nigeria, the 2005 Core Welfare Indicators Questionnaire (CWIQ). The CWIQ survey targeted 77,400 households, 100 in each local government area. I define a battery of controls from the CWIQ survey along the following lines. I construct constituency-level means and standard deviations of the following indices: the proportion of poor in the constituency, measured by a national poverty index, the average years of education of the household head, the proportion of constituents with access to potable water, the average time in minutes to the nearest primary school, and the average journey time in minutes to the nearest secondary school. These indices reflect the sectors under which the majority of the projects in my data fall.

One may also expect politicians to respond to recent investments in their constituency. For example, a politician may feel less inclined to invest in an area that has recently received substantial public projects investments. To reflect the frequency with which constituents have benefited from a public project of the named type in the five years preceding the survey, I also construct indices of whether constituents have received: construction of electrification infrastructure, rehabilitation of electrification infrastructure, a well/borehole, construction of piped water infrastructure, rehabilitation of piped water infrastructure, sanitation, school construction project, school rehabilitation, health facility construction, health facility rehabilitation, road construction, tarring/grading of roads, transportation services, and agricultural-inputs schemes.

Finally, there may be complementarities between the economic environment and public investments. For example, greater access to credit may lead citizens to demand public projects that will facilitate their use of that credit. I therefore create indicators of changes in opportunities for employment, the availability of agricultural inputs, number of buyers of agriculture produce, the availability of extension services, the availability of credit facilities, and the availability of consumer goods.

A.5 Defining complexity indicators

Data on the complexity of government projects is not collected by the Nigerian Government, nor is it a part of the OPEN data set. To create this data, I worked with a pair of Nigerian engineers familiar with

the OPEN projects and a number of international researchers working on project technical complexity to define a relevant set of indicators. I followed the perspectives on complexity suggested by Remington and Pollack (2007), by asking the engineer-assessors to individually assess projects along the following five topics, each with its own set of indicators.

Structural complexity stems from the scale of different interconnected tasks and activities. The indicators associated with this topic capture structural aspects such as project size and the number of inputs required for production. They also capture issues in raw material and labor supply, and the ease with which any necessary specialized skills and equipment can be sourced. *Temporally complex* projects are those in which production involves uncertainties. Hence there are indicators for uncertainties in design and implementation. *Technically complex* projects are those in which production have ambiguous risks, namely their uncertainties are not well understood. Hence some indicators capture ambiguities in design and implementation. *Directional complexity* refers to the potential for preferences over the project to diverge. The engineer assessors were thus asked to rate the managerial complexities of the project. Finally, there is a subjective assessment as to the overall complexity of the project. This allows any unassessed aspects of complexity to be measured and provides a coherent picture of project complexity.

Two qualified and independent Nigerian engineers were then contracted to assess each project in the OPEN data set along these margins. The process of aggregation between engineers used in this project aimed to build a consensus. The first engineer coded indicators for the entire data set. The codings of the first engineer were then provided to the second engineer, who then constructed his own codings with reference to the codings of the first. The aim was to anchor the coding of the second engineer in that of the first, but give him freedom to disagree where he felt the coding was incorrect. Other methods would have been to have them code independently and average the two data sets or to have them work together. I decided that this approach was a balance between consensus and subjectivity.

The two engineers were provided with project details and documents, and asked to code a value for each indicator. The documents only contained information available *before* implementation, such that there was no bias from the coding being done after the projects were implemented.

Aggregate complexity is a subjective assessment of the overall complexity of the projects by the two engineers, that includes ‘all factors that might influence the difficulty of implementing the project, not only those assessed [by the other indicators]’. I asked the engineers to take the distribution of complexity in the OPEN data set as a whole, with the least complex project in the data having an aggregate complexity of zero and the most complex project having an aggregate complexity of 100, and place each project within this distribution.

I undertook a number of measures to check the complexity of the OPEN indicators coded by the engineers. First, I inserted 200 randomly chosen repeated projects into the data set provided to the engineers. Since the project characteristics of the original and repeat projects are identical, I would expect that the codings of the two sets of projects would be similar. Reassuringly, I find that in general the original and duplicate projects are coded in similar ways. I compare the differences between these two sets by looking at group and paired means, and distributional tests for each variable. The differences are only statistically significant at conventional levels in a few cases, and the magnitude of the differences are relatively small. For example, the only variable that is statistically significantly different below the 10 percent level in the mean-comparison t-test relates to raw material storage. Here, despite a standard deviation of 0.2 in the originals, the difference is 0.07 between the originals and the duplicates.

Second, I looked at the similarity of the codings of the two engineers. I find that the second engineer’s codings are not dramatically different from the first engineer’s efforts. Whilst there is a small number of

differences, they are limited and rarely significant at the usual levels, indicating that the re-coding left the overall picture relatively stable.

Finally, more than a year after he had completed the prompted codings, I asked the second engineer to re-code a sub-sample of projects from scratch, this time without prompting by the first engineer's coding choices. The differences between these independent codings and the consensus data on which I rely are again relatively minor. It seems that once he had become accustomed to the broad parameters of the coding framework, the second engineer's coding was not dissimilar to the consensus generated by the two engineers working one after the other.

There is therefore evidence of similar projects within the data set being coded in a similar way; of the two engineers coding in similar ways both when prompted and unprompted; and when there were deviations, of the deviations being quantitatively small. Taken together, these checks reassure us that the complexity measures pick up meaningful variation across projects, rather than merely picking up noise that should have led to the multiple reports (either across engineers or over time) being uncorrelated.

These measures of complexity allow me to condition all the specifications on the aggregate complexity of the project, which are likely to be important determinants of project completion. They also allow me to define indices of local and national information needs. Given how important information has been to the study of delegation (Moe, 2005; Mookherjee, 2006), it is important to understand how I am controlling for the informational demands of each project. The literature on delegation emphasizes the possible importance of superior information at a tier of government as a rationale for delegation. Some projects require a lot of local information to be implemented. For example, they may require sourcing of materials from the local area or be characterized by a high degree of uncertainty that requires local information to respond to. Similarly, some projects may require a lot of information more readily available at the national level. For instance, sourcing international expertise is something national organizations are likely to be better at procuring than local organizations.

I asked one of the engineers with whom I'd worked to define the complexity data to allocate the complexity variables to one of three indices: (i) indicative of the project requiring local information for successful implementation; (ii) indicative of the project requiring national information for successful implementation; or, (iii) indicative of neither. This process led to three complexity indices being generated using z-scores of the underlying variables. These indices were: (i) localized information index (containing the variables 'Storage of raw materials', 'Requires local labor', 'Access to construction equipment', 'Design uncertainty', 'Implementation uncertainty', 'Design ambiguity' and 'Implementation ambiguity'); (ii) national information index (containing the variables 'Access to raw materials' and 'Requires skilled labor'); and (iii) neither information index (containing the variables 'Project size', 'Number of inputs', 'Number of methods', 'Interdependencies', 'Difficulty to manage' and 'Number of agencies involved').

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Table 1: Constituency and Project Characteristics
Means and standard deviations

<i>Panel A: Constituencies</i>	
Number of constituencies	345
	-
Number of local governments in a constituency	2.03 (0.79)
Population (2006)	370,000 (130,000)
Proportion of constituency population in extreme poverty	0.23 (0.15)
Proportion of constituents with access to potable water	0.48 (0.27)
Average hours of electricity in a day	4.46 (3.89)
Time in minutes to nearest primary school	20.33 (7.27)
Time in minutes to nearest secondary school	33.43 (10.04)
Winning vote share (2003 elections)	0.62 (0.15)
Runner's up vote share (2003 elections)	0.29 (0.12)
Proportion of constituencies run by ruling party	0.63
	-
Proportion of constituencies ruling party is runner up	0.34
	-
<i>Panel B: OPEN projects</i>	
OPEN funds per constituency (US\$)	1,100,000 (1,900,000)
Number of OPEN projects by constituency	9 (7.1)
Number of OPEN project types by constituency	3 (1.5)
Number of sectors in constituency	3 (0.9)
Average project budget (US\$)	130,000 (150,000)
Average project complexity (proportion)	0.29 (0.10)
Proportion of constituency projects never started	0.41 (0.25)
Average level of progress of constituency projects	0.46 (0.25)
Level of progress conditional on being started	0.76 (0.22)
Proportion of constituency projects fully completed	0.32 (0.28)
Proportion started with satisfactory quality	0.78 (0.31)

Notes: Standard deviations are in parentheses. The OPEN project data does not include projects in 15 of Nigeria's 360 federal constituencies, so the descriptives provided here are for the restricted set of 345 constituencies only. Constituencies are weighted equally in creating descriptives. Population data is from the 2006 Census. Election data is from the Independent National Electoral Commission official record for the 2003 election. Budget figures originally in Nigerian Naira are converted to US dollars at a rate of US\$1:N150. Figures are rounded to two decimal places where relevant.

Table 2: Determinants of Committee Membership

Dependent Variable: Relevant Committee Membership Binary [Member=1] in All Columns

Robust Standard Errors

	(1) Unconditional	(2) Sector FE	(3) Constituency	(4) Clustering	(5) Project-level	(6) First-stage
Relevant Committee Experience [yes=1]	0.62***	0.63***	0.63***	0.63***	0.60***	0.60***
	(0.03)	(0.03)	(0.03)	(0.05)	(0.03)	(0.03)
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
Sector fixed effects	No	Yes	Yes	Yes	Yes	Yes
Constituency controls	No	No	Yes	Yes	Yes	Yes
Project controls	No	No	No	No	No	Yes
Mean of dependent variable	0.11	0.11	0.11	0.11	0.15	0.15
Adjusted R-squared	0.34	0.34	0.34	-0.20	0.32	0.32
Observations (Clusters)	2,760	2,760	2,760	2,760 (8)	3,008	3,008

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Robust standard errors are in round brackets and associated p-values are in square brackets. The dependant variable in all columns is whether a representative sits on a House sectoral committee. Relevant Committee Membership is a binary variable that indicates whether the representative has qualifications or significant work experience in a sector corresponding to the sectoral committee on which they sit (columns 1 to 4) or that a project is in a constituency and sector in which the corresponding House representative sits on the relevant sectoral committee, taking the value 1 if so and 0 otherwise (columns 5 and 6). Sector fixed effects relate to whether the committee is in the Agriculture, Education, Environment, Federal Capital Territory, Health, Housing, Water or Female Empowerment sector. Constituency characteristics are comprised of the means and standard deviations of the following indices: the proportion of poor in the constituency, measured by a national poverty index, the average years of education of the household head, the proportion of constituents with access to potable water, the average time in minutes to the nearest primary school, and the average time in minutes to the nearest secondary school. Means and standard deviations of the following indices are also included to reflect the frequency with which constituents benefit from a public project of the named type in the five years preceding 2006: construction of electrification infrastructure, rehabilitation of electrification infrastructure, well/borehole, construction of piped water infrastructure, rehabilitation of piped water infrastructure, sanitation, school construction project, school rehabilitation, health facility construction, health facility rehabilitation, road construction, tarring/grading of roads, transportation services, and agricultural-inputs schemes. Finally, constituency characteristics include a set of indicators of the economic dynamics of the constituency, comprised of indicators of improvements in opportunities for employment, the availability of agricultural inputs, number of buyers of agriculture produce, the availability of extension services, the availability of credit facilities, and the availability of consumer goods. Figures are rounded to two decimal places.

Table 3: Instrumental Variables Estimates of the Impact of Formal Authority

Dependent Variable: Percentage of Project Completed in Column 1; Initiation Binary [yes=1] in Column 2; Completion Binary [yes=1] in Column 3; Quality Binary [satisfactory=1] in Column 4; Proportion/Quality Interaction in Column 5

Robust Standard Errors

	(1) Proportion Completed	(2) Project Starts	(3) Project Completes	(4) Project Quality	(5) Quality-Adjusted Completion Rate
Relevant Committee Membership [Member=1]	0.09** (0.04) [0.02]	0.09** (0.04) [0.04]	0.06 (0.04) [0.14]	-0.12** (0.06) [0.04]	-0.06 (0.05) [0.28]
Project and constituency controls	Yes	Yes	Yes	Yes	Yes
Mean of dependent variable	0.50	0.63	0.37	0.81	0.65
Adjusted R-squared	0.35	0.29	0.32	0.17	0.23
First Stage F-Statistic	523	523	523	342	342
Observations	3,008	3,008	3,008	1,368	1,368

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Robust standard errors are in round brackets and associated p-values are in square brackets. The dependant variable in Column 1 is the proportion of the project completed (that is a continuous measure between zero and one); in Columns 2 and 3 a binary variable that takes the value 1 if a project is initiated and completed respectively, and 0 otherwise; in Column 4 a binary variable that takes the value 1 if the project is deemed to be of satisfactory quality and zero otherwise; and, in Column 5 an interaction between the proportion of the project completed and the satisfactory quality binary. Relevant Committee Membership is a binary variable that indicates whether the project is in a constituency and sector in which the corresponding House representative sits on the relevant sectoral committee, taking the value 1 if so and 0 otherwise. Project controls are comprised of project-level controls for the log of the project budget; binary variables indicating whether the project is new or a rehabilitation, and whether it was implemented in 2006 or 2007; assessments of its aggregate complexity; national and local information requirements by Nigerian engineers; and sector and project type fixed effects. Sector fixed effects relate to whether the project is in the Agriculture, Education, Environment, Health, Housing, Water or Female Empowerment sector. Project type fixed effects relate to whether the primary classification of the project is as an advocacy, building, borehole, canal, dam, financial, procurement, research, road or training project. Constituency characteristics are comprised of the means and standard deviations of the following indices: the proportion of poor in the constituency, measured by a national poverty index, the average years of education of the household head, the proportion of constituents with access to potable water, the average time in minutes to the nearest primary school, and the average time in minutes to the nearest secondary school. Means and standard deviations of the following indices are also included to reflect the frequency with which constituents benefit from a public project of the named type in the five years preceding 2006: construction of electrification infrastructure, rehabilitation of electrification infrastructure, well/borehole, construction of piped water infrastructure, rehabilitation of piped water infrastructure, sanitation, school construction project, school rehabilitation, health facility construction, health facility rehabilitation, road construction, tarring/grading of roads, transportation services, and agricultural-inputs schemes. Finally, constituency characteristics include a set of indicators of the economic dynamics of the constituency, comprised of indicators of improvements in opportunities for employment, the availability of agricultural inputs, number of buyers of agriculture produce, the availability of extension services, the availability of credit facilities, and the availability of consumer goods. Figures are rounded to two decimal places.

Table 4: Avenues of Influence

Dependent Variable: Number of Projects in Consituency in Column 1; Total Value of Projects in Consituency in Column 2; Individual Project Budget in Column 3; Project Complexity in Column 4; Total Release of Funds in Column 5; Proportion of Release in First Two Warrants in Column 6

Robust Standard Errors

	(1) Number of Projects	(2) Total Value of Projects (\$m)	(3) Project Budget (\$m)	(4) Project Complexity	(5) Timing of Releases
Relevant Committee Membership [Member=1]	-0.28	-0.39	0.02	0.02	0.08**
	(2.45)	(0.42)	(0.02)	(0.01)	(0.04)
	[0.91]	[0.35]	[0.38]	[0.17]	[0.03]
Constituency controls	Yes	Yes	Yes	Yes	Yes
Project controls	No	No	Yes	Yes	Yes
Mean of dependent variable	8.72	1.15	0.13	0.27	0.62
Adjusted R-squared	0.11	0.04	0.17	0.65	0.60
First Stage F-Statistic	53	53	523	521	523
Observations	345	345	3,008	3,008	3,008

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Robust standard errors are in round brackets and associated p-values are in square brackets. The dependant variable in Column 1 is the number of OPEN projects in a constituency; in Column 2 is the total value of OPEN projects in a constituency in millions of US Dollars; in Column 3 is the individual project budget; in Column 4 is an assessment of aggregate project complexity by independent engineers; in Column 5 the proportion of appropriated budget for a project that was released in the first two quarterly budgetary releases (of four). Relevant Committee Membership is a binary variable that indicates whether the project is in a constituency and sector in which the corresponding House representative sits on the relevant sectoral committee, taking the value 1 if so and 0 otherwise. Project controls are comprised of project-level controls for the log of the project budget; binary variables indicating whether the project is new or a rehabilitation, and whether it was implemented in 2006 or 2007; assessments of its aggregate complexity; national and local information requirements by Nigerian engineers; and sector and project type fixed effects. Sector fixed effects relate to whether the project is in the Agriculture, Education, Environment, Health, Housing, Water or Female Empowerment sector. Project type fixed effects relate to whether the primary classification of the project is as an advocacy, building, borehole, canal, dam, financial, procurement, research, road or training project. Columns 3 and 4 exclude the corresponding control when it is the dependant variable. Constituency characteristics are comprised of the means and standard deviations of the following indices: the proportion of poor in the constituency, measured by a national poverty index, the average years of education of the household head, the proportion of constituents with access to potable water, the average time in minutes to the nearest primary school, and the average time in minutes to the nearest secondary school. Means and standard deviations of the following indices are also included to reflect the frequency with which constituents benefit from a public project of the named type in the five years preceding 2006: construction of electrification infrastructure, rehabilitation of electrification infrastructure, well/borehole, construction of piped water infrastructure, rehabilitation of piped water infrastructure, sanitation, school construction project, school rehabilitation, health facility construction, health facility rehabilitation, road construction, tarring/grading of roads, transportation services, and agricultural-inputs schemes. Finally, constituency characteristics include a set of indicators of the economic dynamics of the constituency, comprised of indicators of improvements in opportunities for employment, the availability of agricultural inputs, number of buyers of agriculture produce, the availability of extension services, the availability of credit facilities, and the availability of consumer goods. Figures are rounded to two decimal places.

Table 5: Instrumental Variables Estimates of Political Engagement with the Bureaucracy

Robust Standard Errors

	Legislative					Executive			
	(1) Any Politician Intervenes	(2) Any Politician Engages	(3) National Politician	(4) State Politician	(5) Local Government Chairman	(6) Community Group	(7) Centralized Ministry	(8) Governor	(9) State Commissioner
Relevant Committee Membership [Member=1]	-1.93***	-3.34***	-3.33***	-1.64***	-0.14	-0.35	0.44	1.17***	2.30***
	(0.60)	(0.75)	(0.98)	(0.38)	(1.03)	(1.20)	(0.55)	(0.44)	(0.68)
	[0.00]	[0.00]	[0.00]	[0.00]	[0.89]	[0.77]	[0.42]	[0.01]	[0.00]
Constituency controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean of dependent variable	15	11	18	8	12	22	27	13	11
Adjusted R-squared	0.15	0.05	0.13	0.05	0.14	0.12	0.12	0.22	0.07
First Stage F-Statistic					503				
Observations	3,008	3,008	3,008	3,008	3,008	3,008	3,008	3,008	3,008

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Robust standard errors are in round brackets and associated p-values are in square brackets. The dependant variables in columns 1 through 9 are the average proportion of projects public officials in the organization implementing the project that state any politician intervenes in the project (Column 1), involve personal engagement with a politician (Column 2), involves intervention by a National Assembly member (Column 3), by a state assembly member (Column 4), by a local government chairman (Column 5), by a member of a community group (Column 6), by a central ministry (Column 7), by a governor (Column 8), or by a state commissioner (Column 9). Relevant Committee Membership is a binary variable that indicates whether the project is in a constituency and sector in which the corresponding House representative sits on the relevant sectoral committee, taking the value 1 if so and 0 otherwise. Constituency characteristics are comprised of the means and standard deviations of the following indices: the proportion of poor in the constituency, measured by a national poverty index, the average years of education of the household head, the proportion of constituents with access to potable water, the average time in minutes to the nearest primary school, and the average time in minutes to the nearest secondary school. Means and standard deviations of the following indices are also included to reflect the frequency with which constituents benefit from a public project of the named type in the five years preceding 2006: construction of electrification infrastructure, rehabilitation of electrification infrastructure, well/borehole, construction of piped water infrastructure, rehabilitation of piped water infrastructure, sanitation, school construction project, school rehabilitation, health facility construction, health facility rehabilitation, road construction, tarring/grading of roads, transportation services, and agricultural-inputs schemes. Finally, constituency characteristics include a set of indicators of the economic dynamics of the constituency, comprised of indicators of improvements in opportunities for employment, the availability of agricultural inputs, number of buyers of agriculture produce, the availability of extension services, the availability of credit facilities, and the availability of consumer goods. Figures are rounded to two decimal places.

Table 6: Impacts on Corruption

Robust Standard Errors

	(1) Breaking Rules	(2) Corruption Pressure	(3) Change Location	(4) Change Specifications	(5) Select Contractors	(6) Divert Funds
Relevant Committee Membership [Member=1]	1.36**	1.70***	0.59	1.18**	3.97***	1.12*
	(0.59)	(0.60)	(0.46)	(0.60)	(0.86)	(0.65)
	[0.02]	[0.00]	[0.20]	[0.05]	[0.00]	[0.08]
Constituency controls	Yes	Yes	Yes	Yes	Yes	Yes
Mean of dependent variable	38	20	19	20	23	17
Adjusted R-squared	0.24	0.14	0.13	0.20	0.12	0.08
First Stage F-Statistic				503		
Observations	3,008	3,008	3,008	3,008	3,008	3,008

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Robust standard errors are in round brackets and associated p-values are in square brackets. The dependant variables are the average proportion of projects on which staff in the implementing organization corresponding to the project report: observing others breaking the Public Service Rules in Column 1; pressure to engage in corruption, which is an average of the variables presented in the next four columns, in Column 2; pressure to change project location in Column 3; pressure to change project specifications in Column 4; pressure to change project contractors in Column 5; and, pressure to divert project resources in Column 6. Relevant Committee Membership is a binary variable that indicates whether the project is in a constituency and sector in which the corresponding House representative sits on the relevant sectoral committee, taking the value 1 if so and 0 otherwise. Constituency characteristics are comprised of the means and standard deviations of the following indices: the proportion of poor in the constituency, measured by a national poverty index, the average years of education of the household head, the proportion of constituents with access to potable water, the average time in minutes to the nearest primary school, and the average time in minutes to the nearest secondary school. Means and standard deviations of the following indices are also included to reflect the frequency with which constituents benefit from a public project of the named type in the five years preceding 2006: construction of electrification infrastructure, rehabilitation of electrification infrastructure, well/borehole, construction of piped water infrastructure, rehabilitation of piped water infrastructure, sanitation, school construction project, school rehabilitation, health facility construction, health facility rehabilitation, road construction, tarring/grading of roads, transportation services, and agricultural-inputs schemes. Finally, constituency characteristics include a set of indicators of the economic dynamics of the constituency, comprised of indicators of improvements in opportunities for employment, the availability of agricultural inputs, number of buyers of agriculture produce, the availability of extension services, the availability of credit facilities, and the availability of consumer goods. Figures are rounded to two decimal places.

Table 7: Impacts on Election 2007

Dependent Variable: Election 2007 Winner [yes=1]

Robust Standard Errors

	(1) OLS	(2) Robust	(3) Clustered
Relevant Committee Membership [Member=1]	0.16*** (0.03) [0.00]	0.15** (0.06) [0.02]	0.15* (0.09) [0.10]
Project and constituency controls	Yes	Yes	Yes
Mean of dependent variable	0.61	0.61	0.61
Adjusted R-squared	0.44	0.44	0.44
First Stage F-Statistic	-	213	51
Observations	1,330	1,330	1,330

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Robust standard errors are in round brackets and associated p-values are in square brackets. The dependant variable in all columns is whether the corresponding representative won the 2007 election. Relevant Committee Membership is a binary variable that indicates whether the project is in a constituency and sector in which the corresponding House representative sits on the relevant sectoral committee, taking the value 1 if so and 0 otherwise. Project controls are comprised of project-level controls for the log of the project budget; binary variables indicating whether the project is new or a rehabilitation, and whether it was implemented in 2006 or 2007; assessments of its aggregate complexity; national and local information requirements by Nigerian engineers; and sector and project type fixed effects. Sector fixed effects relate to whether the project is in the Agriculture, Education, Environment, Health, Housing, Water or Female Empowerment sector. Project type fixed effects relate to whether the primary classification of the project is as an advocacy, building, borehole, canal, dam, financial, procurement, research, road or training project. Constituency characteristics are comprised of the means and standard deviations of the following indices: the proportion of poor in the constituency, measured by a national poverty index, the average years of education of the household head, the proportion of constituents with access to potable water, the average time in minutes to the nearest primary school, and the average time in minutes to the nearest secondary school. Means and standard deviations of the following indices are also included to reflect the frequency with which constituents benefit from a public project of the named type in the five years preceding 2006: construction of electrification infrastructure, rehabilitation of electrification infrastructure, well/borehole, construction of piped water infrastructure, rehabilitation of piped water infrastructure, sanitation, school construction project, school rehabilitation, health facility construction, health facility rehabilitation, road construction, tarring/grading of roads, transportation services, and agricultural-inputs schemes. Finally, constituency characteristics include a set of indicators of the economic dynamics of the constituency, comprised of indicators of improvements in opportunities for employment, the availability of agricultural inputs, number of buyers of agriculture produce, the availability of extension services, the availability of credit facilities, and the availability of consumer goods. Figures are rounded to two decimal places.

Table A1: Normalized Differences and Comparability
Means and standard deviations

	(1) Treated	(2) Untreated	(3) Normalized difference
Average project budget (US\$, thousands)	148 (684)	121 (320)	0.04
Average project complexity (proportion)	0.27 (0.21)	0.28 (0.20)	-0.05
Rehabilitation [yes=1]	0.21 (0.41)	0.20 (0.40)	0.03
Local information requirement index	-0.04 (1.05)	0.03 (0.97)	-0.05
Population (2006) of implementing constituency	205,000 (113,000)	187,000 (92,900)	0.13
Proportion of constituency population in extreme poverty	0.24 (0.14)	0.25 (0.15)	-0.04
Winning vote share (2003 elections) of winning constituency	0.63 (0.15)	0.61 (0.13)	0.09
Observations	1,137	1,871	

Notes: Standard deviations are in parentheses. Normalised Difference is the difference in averages, scaled by the square root of the sum of the variances. Budget figures originally in Nigerian Naira are converted to US dollars at a rate of US\$1:N150. Population data is from the 2006 Census. Election data is from the Independent National Electoral Commission official record for the 2003 election. Figures are rounded to two decimal places where relevant.

Table A2: Politician Characteristics across Committees

OLS Estimates

	(1) Age of Politician	(2) Sex of Politician [female=1]	(3) Years of Education	(4) Political Competition in Constituency	(5) Index of Poverty in Constituency
Agriculture Committee	1.27 (1.17)	0.03 (0.03)	-0.45* (0.27)	0.04 (0.03)	-0.01 (0.02)
Education Committee	2.80** (1.18)	0.01 (0.03)	0.28 (0.27)	0.00 (0.03)	-0.02 (0.03)
Environment Committee	0.18 (1.19)	-0.03 (0.03)	0.28 (0.27)	0.05** (0.03)	0.01 (0.03)
FCT Committee	-1.66 (1.19)	-0.01 (0.03)	-0.42 (0.27)	-0.02 (0.03)	0.00 (0.03)
Health Committee	-0.78 (1.21)	0.03 (0.03)	-0.16 (0.28)	-0.02 (0.03)	0.02 (0.03)
Housing Committee	-0.27 (1.11)	-0.03 (0.03)	0.06 (0.25)	0.03 (0.02)	-0.03 (0.02)
Water Committee	1.52 (1.09)	-0.01 (0.03)	-0.07 (0.25)	0.00 (0.02)	0.01 (0.02)
Women and Youth Committee	0.27 (1.45)	0.63*** (0.04)	-0.52 (0.33)	-0.04 (0.03)	-0.04 (0.03)
H₀: All coefficients equal [p-value]	0.41	0.00	0.26	0.19	0.78
H₀: All coefficients bar Women and Youth equal [p-value]	-	0.63	-	-	-
Observations	345	345	345	345	345

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Robust standard errors are in parentheses. All columns report OLS estimates. The dependent variable in column 1 is the age of the politician. In column 2, it is a binary variable reflecting the sex of the politician, which takes the value 1 if the politician is female. In column 3, the dependent variable is the years of education of the politician. In column 4, it is the winning vote share in the constituency that the politician represents. In column 5, it is the proportion of poor in the politician's constituency, measured by a national poverty index. The 'FCT Committee' refers to the Federal Capital Territory Committee that has jurisdiction over the building of infrastructure within the Federal Capital Territory, the municipal area in which the capital, Abuja, sits. At the foot of the table, I report the p-value on the null that the coefficients in each column are of equal magnitude. I also report the p-value on the null that the coefficients in column 2, excluding that on the Women Affairs and Youth committee, are of equal magnitude. Figures are rounded to two decimal places.

Table A3: Investigating the Determinants of Committee Membership

Dependent Variable: System of Ten Equations in Membership of Sectoral Committees

Robust Standard Errors

Estimates by Maximum Likelihood to Fit a SUR Model

	Member of Agriculture Committee	Member of Education Committee	Member of Environment Committee	Member of FCT Committee	Member of Health Committee	Member of Housing Committee	Member of Water Committee	Member of Women/Youth Committee
Politician has relevant qualifications/experience [yes=1]	0.51*** (0.04)	0.48*** (0.04)	0.69*** (0.06)	0.82*** (0.04)	0.73*** (0.05)	0.68*** (0.04)	0.56*** (0.05)	0.47*** (0.12)
Age of politician	0.000 (0.002)	0.001 (0.002)	0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)	0.001 (0.002)	0.001 (0.001)
Sex of politician [female=1]	0.16*** (0.06)	0.00 (0.06)	-0.01 (0.06)	0.04 (0.05)	-0.12** (0.06)	-0.04 (0.06)	0.03 (0.07)	0.30** (0.12)
Politician years of education	0.00 (0.01)	0.02** (0.01)	0.00 (0.01)	-0.01 (0.01)	-0.03*** (0.01)	-0.01 (0.01)	0.00 (0.01)	0.00 (0.01)
Level of political competition	0.28** (0.11)	0.12 (0.11)	0.03 (0.10)	-0.13 (0.09)	-0.14 (0.10)	0.02 (0.11)	-0.12 (0.12)	-0.08 (0.07)
Index of poverty	-0.06 (0.12)	-0.04 (0.13)	-0.08 (0.12)	0.07 (0.10)	0.02 (0.11)	0.02 (0.12)	0.04 (0.14)	-0.07 (0.08)
Proportion of constituents with access to potable water	-0.08 (0.07)	0.06 (0.07)	-0.06 (0.07)	0.09 (0.06)	0.06 (0.06)	0.05 (0.07)	-0.05 (0.08)	-0.03 (0.05)
Time in minutes to nearest primary school	0.004 (0.004)	-0.004 (0.004)	0.002 (0.003)	0.001 (0.003)	0.003 (0.003)	0.002 (0.004)	-0.004 (0.004)	0.003 (0.002)
Average education of household head	-0.01 (0.01)	-0.01 (0.01)	0.01 (0.01)	0.00 (0.01)	0.01 (0.01)	0.00 (0.01)	0.01 (0.01)	0.01 (0.01)
Politician and constituency controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Correlation of residuals in SUR system:								
<i>Agriculture</i>	1.00							
<i>Education</i>	-0.14	1.00						
<i>Environment</i>	-0.03	0.02	1.00					
<i>FCT</i>	-0.09	-0.06	0.02	1.00				
<i>Health</i>	-0.04	-0.05	0.07	0.07	1.00			
<i>Housing</i>	-0.03	-0.05	-0.04	0.12	0.05	1.00		
<i>Water</i>	-0.12	-0.09	0.03	0.00	0.00	0.06	1.00	
<i>Women/Youth</i>	0.03	-0.01	0.12	0.12	0.01	-0.07	0.10	1.00
Observations	345	345	345	345	345	345	345	345

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Robust standard errors are in parentheses. Columns report maximum likelihood estimates to fit a SUR model for the ten sectoral committees. The dependent variable in all specifications is a binary variable reflecting whether a politician is a member of the committee for the named sector, taking the value 1 when the politician is a member. The 'FCT Committee' refers to the Federal Capital Territory Committee that has jurisdiction over the building of infrastructure within the Federal Capital Territory, the municipal area in which the capital, Abuja, sits. Politician controls are comprised of constituency-level controls for the sex, age, years of education and tenure in congress of the relevant politician. In the very small number of cases in which age or years of education are missing, I replace the missing value with the mean of the rest of the politicians and include a dummy variable to indicate the missing data. Constituency characteristics are comprised of the means and standard deviations of the following indices: the proportion of poor in the constituency, measured by a national poverty index, the average years of education of the household head, the proportion of constituents with access to potable water, the average time in minutes to the nearest primary school, and the average time in minutes to the nearest secondary school. Means and standard deviations of the following indices are also included to reflect the frequency with which constituents benefit from a public project of the named type in the five years preceding 2006: construction of electrification infrastructure, rehabilitation of electrification infrastructure, well/borehole, construction of piped water infrastructure, rehabilitation of piped water infrastructure, sanitation, school construction project, school rehabilitation, health facility construction, health facility rehabilitation, road construction, tarring/grading of roads, transportation services, and agricultural-inputs schemes. Finally, constituency characteristics include a set of indicators of the economic dynamics of the constituency, comprising indicators of improvements in opportunities for employment, the availability of agricultural inputs, number of buyers of agriculture produce, the availability of extension services, the availability of credit facilities, and the availability of consumer goods. All specifications include dummies for five of the six geo-political zones and an indicator of the 'grade' of the committee under which the project falls, which is a dummy that takes the value 1 if the committee is perceived to be of high political weight or 0 otherwise. Figures are rounded to two decimal places.

Table A4: Investigating the Determinants of Politicians' Qualifications and Experience

Dependent Variable: System of Eight Equations in Sector of Politician's Qualifications and Experience

Robust Standard Errors

Estimates by Maximum Likelihood to Fit a SUR Model

	Agriculture Sector	Education Sector	Environment Sector	FCT Sector	Health Sector	Housing Sector	Water Sector	Women/Youth Sector
Age of politician	0.01*** (0.003)	0.01*** (0.003)	0.00 (0.002)	0.00 (0.002)	0.00 (0.002)	0.00 (0.002)	0.00 (0.002)	0.00 (0.001)
Sex of politician [female=1]	-0.08 (0.08)	0.17** (0.07)	0.00 (0.06)	0.01 (0.07)	0.14** (0.06)	-0.07 (0.07)	0.05 (0.07)	0.99*** (0.02)
Politician years of education	-0.01 (0.01)	-0.01 (0.01)	0.01 (0.01)	-0.01 (0.01)	0.04*** (0.01)	0.01 (0.01)	0.00 (0.01)	0.00 (0.00)
Index of poverty (NISH 1980)	0.00 (0.002)	0.00 (0.002)	0.00 (0.001)	0.00 (0.001)	-0.002* (0.001)	0.00 (0.001)	0.00 (0.001)	0.00 (0.00)
Proportion of constituents with access to potable water (NISH 1980)	0.00 (0.002)	0.00 (0.002)	0.00 (0.001)	0.00 (0.001)	0.00 (0.001)	0.00 (0.001)	0.00 (0.001)	0.00 (0.00)
Time in minutes to nearest primary school (NISH 1980)	-0.01 (0.002)	0.00 (0.002)	0.00 (0.002)	0.00 (0.002)	0.00 (0.002)	0.00 (0.002)	0.00 (0.002)	0.00 (0.00)
Average education of household head (NISH 1980)	0.01 (0.004)	0.00 (0.004)	0.00 (0.003)	0.00 (0.004)	0.00 (0.003)	0.00 (0.004)	0.00 (0.004)	0.00 (0.001)
Politician and constituency controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Correlation of residuals in SUR system:								
<i>Agriculture</i>	1.00							
<i>Education</i>	-0.05	1.00						
<i>Environment</i>	0.23	-0.04	1.00					
<i>FCT</i>	-0.01	0.02	0.05	1.00				
<i>Health</i>	-0.06	-0.03	-0.10	-0.02	1.00			
<i>Housing</i>	0.03	-0.04	0.10	0.21	-0.06	1.00		
<i>Water</i>	0.10	0.01	0.14	0.30	0.02	0.22	1.00	
<i>Women/Youth</i>	-0.02	-0.03	-0.01	0.11	-0.04	0.08	-0.02	1.00
Observations	345	345	345	345	345	345	345	345

Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Robust standard errors are in parentheses. Columns report maximum likelihood estimates to fit a SUR model for the nine sectors. The dependent variable in all specifications is a binary variable reflecting whether a politician has qualifications and/or experience in the named sector, taking the value 1 when the politician has relevant qualifications and/or experience. The 'FCT Committee' refers to the Federal Capital Territory Committee that has jurisdiction over the building of infrastructure within the Federal Capital Territory, the municipal area in which the capital, Abuja, sits. Politician controls are comprised of constituency-level controls for the sex, age and years of education of the relevant politician. In the very small number of cases in which age or years of education are missing, I replace the missing value with the mean of the rest of the politicians and include a dummy variable to indicate the missing data. Constituency characteristics are comprised of the means and standard deviations of the following indices: the proportion of poor in the constituency, measured by a national poverty index, the average years of education of the household head, the proportion of constituents with access to potable water, the average time in minutes to the nearest primary school, and the average time in minutes to the nearest secondary school. Means and standard deviations of the following indices are also included to reflect the frequency with which constituents benefit from a public project of the named type in the five years preceding 2006: construction of electrification infrastructure, rehabilitation of electrification infrastructure, well/borehole, construction of piped water infrastructure, rehabilitation of piped water infrastructure, sanitation, school construction project, school rehabilitation, health facility construction, health facility rehabilitation, road construction, tarring/grading of roads, transportation services, and agricultural-inputs schemes. Finally, constituency characteristics include a set of indicators of the economic dynamics of the constituency, comprising indicators of improvements in opportunities for employment, the availability of agricultural inputs, number of buyers of agriculture produce, the availability of extension services, the availability of credit facilities, and the availability of consumer goods. Figures are rounded to two decimal places.

Table A5: Robustness of Core Instrumental Variables Estimate

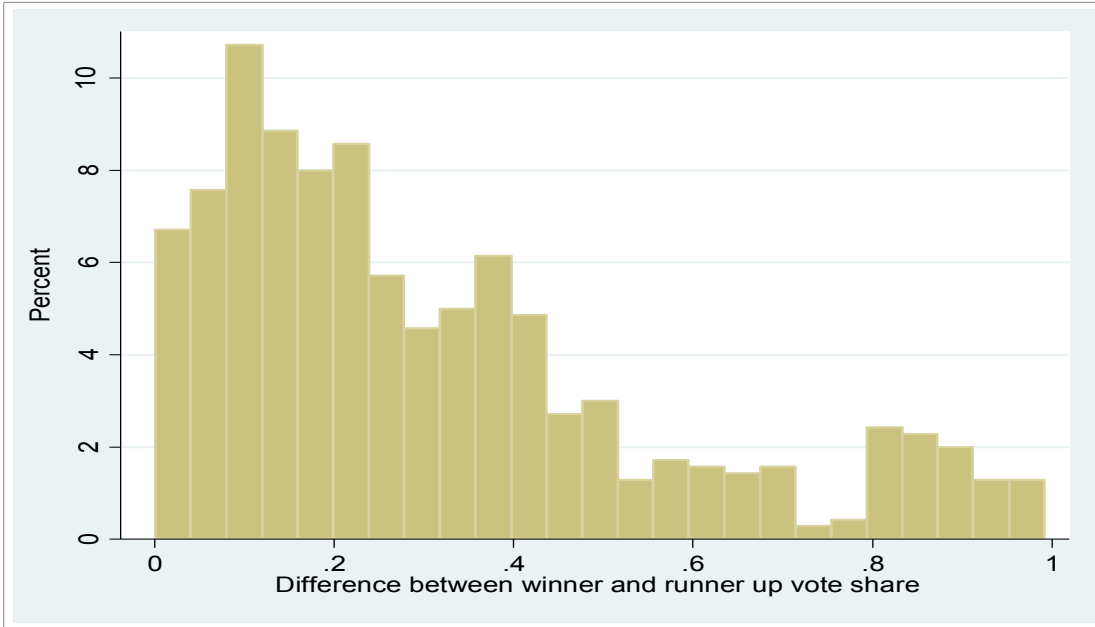
Dependent Variable: Percentage of Project Completed in All Columns

Robust Standard Errors

	(0) Baseline	(1) OLS	(2) Clustering at File Level	(3) Clustering at Federal Constituency	(4) Clustering at Organization	(5) Excluding Agriculture Committee	(6) 'High grade' Committees	(7) Above Mean Political Competition	(8) Below Mean Political Competition
Relevant Committee Membership [Member=1]	0.09** (0.04) [0.02]	0.01 (0.02) [0.54]	0.09** (0.04) [0.04]	0.09* (0.05) [0.09]	0.09* (0.05) [0.07]	0.09* (0.05) [0.08]	0.12*** (0.04) [0.01]	0.08** (0.04) [0.04]	0.08 (0.08) [0.31]
Project and Constituency Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean of Dependent Variable	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Adjusted R-squared	0.35	0.36	0.35	0.35	0.35	0.37	0.38	0.37	0.40
First Stage F-Statistic	523	-	306	115	107	266	363	410	121
Observations (Clusters)	3,008	3,008	3,008 (1,818)	3,008 (345)	3,008 (54)	2,624	2,498	1,806	1,202

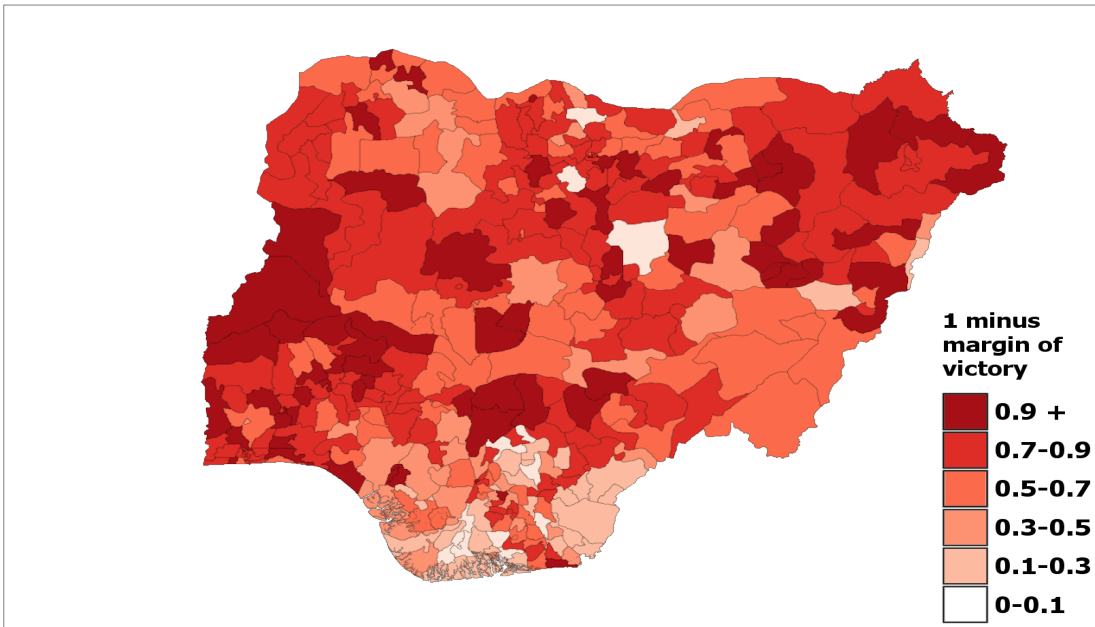
Notes: *** denotes significance at 1%, ** at 5%, and * at 10% level. Robust standard errors are in round brackets and associated p-values are in square brackets. The dependant variable in all columns is the proportion of the project completed (that is a continuous measure between zero and one). Relevant Committee Membership is a binary variable that indicates whether the project is in a constituency and sector in which the corresponding House representative sits on the relevant sectoral committee, taking the value 1 if so and 0 otherwise. The sample is restricted in Column 6, 7 and 8 to those sectors that are regarded as 'high grade' committees, to constituencies above the mean level of political competition, and to constituencies below the mean level of political competition respectively. Project controls are comprised of project-level controls for the log of the project budget; binary variables indicating whether the project is new or a rehabilitation, and whether it was implemented in 2006 or 2007; assessments of its aggregate complexity; national and local information requirements by Nigerian engineers; and sector and project type fixed effects. Sector fixed effects relate to whether the project is in the Agriculture, Education, Environment, Health, Housing, Water or Female Empowerment sector. Project type fixed effects relate to whether the primary classification of the project is as an advocacy, building, borehole, canal, dam, financial, procurement, research, road or training project. Constituency characteristics are comprised of the means and standard deviations of the following indices: the proportion of poor in the constituency, measured by a national poverty index, the average years of education of the household head, the proportion of constituents with access to potable water, the average time in minutes to the nearest primary school, and the average time in minutes to the nearest secondary school. Means and standard deviations of the following indices are also included to reflect the frequency with which constituents benefit from a public project of the named type in the five years preceding 2006: construction of electrification infrastructure, rehabilitation of electrification infrastructure, well/borehole, construction of piped water infrastructure, rehabilitation of piped water infrastructure, sanitation, school construction project, school rehabilitation, health facility construction, health facility rehabilitation, road construction, tarring/grading of roads, transportation services, and agricultural-inputs schemes. Finally, constituency characteristics include a set of indicators of the economic dynamics of the constituency, comprised of indicators of improvements in opportunities for employment, the availability of agricultural inputs, number of buyers of agriculture produce, the availability of extension services, the availability of credit facilities, and the availability of consumer goods. Figures are rounded to two decimal places.

Figure 1A: Histogram of Difference Between Winner and Runner Up Vote Share



Notes: This is a histogram of the difference between the winning vote share in a constituency and that of the runner up. The sample used to construct the histogram is those constituencies for which I observe the implementation of public projects.

Figure 1B: Map of Political Competition Across Nigeria



Notes: This is a choropleth map of one minus the difference between the winning vote share in a constituency and that of the runner up. The choropleth map is colored such that the deeper the intensity of shading, the higher the level of political competition.