Working paper

Policing Politicians

Citizen
Empowerment
and Political
Accountability
in Uganda -
Preliminary Analysis

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Policing Politicians: Citizen Empowerment and Political Accountability in Uganda
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Abstract

Identifying the conditions under which politicians are responsive to citizens' needs and preferences is a central concern in the study of political economy. Does greater transparency improve political accountability? We use a simple model of political accountability to derive a set of hypotheses linking access to information to political behavior and provide results from a multi-level field experiment designed to test these hypotheses in the context of parliamentary behavior in Uganda. Between 2006 and 2011, working with a Ugandan partner, we developed a scorecard with detailed information on the behavior of Ugandan Members of Parliament (MPs), informed a randomly selected sample of MPs that the information would be disseminated in their constituencies, and provided voters with information about their MP's performance through a variety of dissemination channels. Evidence from survey experiments indicate that Ugandan voters are strongly receptive to new information about the performance of their MPs. Evidence from the dissemination campaigns, however, provides no evidence that MPs respond to a higher level of transparency or that their prospects for reelection are threatened by it.

1 Introduction

Identifying the conditions under which politicians are responsive to citizens' needs and preferences is a central concern in the study of political economy. As (Besley and Burgess, 2002) argue, "it is particularly poignant in low-income countries where, in the absence of market opportunities, vulnerable populations rely in large measure on state action for their survival." Thus, unsurprisingly, observers greeted Africa's wave of democratization in the 1990s with guarded optimism, anticipating that regular elections might provide strong incentives for better governmental performance.

There is some evidence that Africa's democratic experiments are producing governments that better protect the rights and interests of their constituents. 44 of 48 countries in Sub-Saharan African held at least one contested election between 1989 and 2003, and 20 mounted three consecutive elections. While some of the early elections were admittedly imperfect, (Lindberg, 2006) argues that countries exhibit a trend toward elections of higher quality over time. Posner and Young (2007) demonstrate further that "formal rules of the game" constrain African politicians in ways that they previously have not; while three-quarters of African politicians who left office in the 1960s and 1970s did so through coups, violent overthrows, or assassinations, the share replaced through irregular means dropped to just 19 percent after 2000. With respect to the provision of public goods that benefit the poor, Stasavage (2005) argues that multiparty elections increased education spending by 1.1% of GDP, while (Kudamatsu, forthcoming) provides evidence that Africa's democratization has yielded improvements in infant mortality of nearly 2 percentage points.

But there are also reasons to be concerned that the rise of electoral democracy in Africa might not fulfill its promise of greater political accountability and better performance. A wave of recent scholarship highlights the emergence of "hybrid" or "semi-authoritarian" regimes which combine "the rhetorical acceptance of liberal democracy, the existence of some formal democratic institutions [. . .] with essentially illiberal or even authoritarian traits" (Ottaway, 2005: 3) (see also (Levitsky and Way, 2010, 2002)). These governments allow little real competition for power, thereby diminishing government accountability. They are also abundant in Africa, where multiparty elections often fail to produce working parliaments or other institutions capable of holding the executive in check. Moreover, there is growing evidence that political liberalization may not be sufficient to generate greater investments in public goods. (Wantchekon, 2003) shows that candidates in democratic Benin employ patronage appeals to great effect, whereas platforms constructed around investments in public goods yield few electoral benefits. Kasara (2006) demonstrates that, expensive and inefficient sub-national administrative districts proliferated in Kenya as an electoral strategy by the ruling party to win the votes of minority ethnic groups. Both studies suggest, as Callaghy (1993) and (van de Walle, 2001, 2003) cautioned, that electoral politics may not generate improvements in economic and social policies, but only reinforce patterns of ethnic politics and patronage.

One reason why the advent of electoral democracy in Africa may be insufficient to improve governance and accountability is that voters typically do not observe the actions of politicians and may be uninformed about their behavior or their preferences (Besley and Burgess 2002). This information asymmetry leaves room for politicians to act opportunistically, to shirk their duties, and to ignore the needs or preferences of the citizenry. Thus, some have proposed that

a key mechanism for enhancing the performance and accountability of politicians is greater transparency (Sen, 1999). With better information, voters can select higher quality politicians and hold poorly performing ones accountable at the polls (Besley 2005). But transparency could have limited or even adverse effects. For example, it may be the case that voters are relatively indifferent to the performance of politicians, responding instead to ethnic or party cues, clientelistic arrangements, or the instructions of traditional leaders. Or it is possible that transparency could induce poorly performing politicians to disguise their opportunistic behavior or shirking, thereby decreasing the likelihood that they are detected by voters and offsetting the positive impact of information.

In this paper, we use a large field experiment in Uganda to evaluate the impact of greater transparency on voters' attitudes, the performance of politicians, and electoral outcomes. Our field experiment took place during the 8th Parliament in Uganda (2006-2011). Partnering with a local non-governmental organization (NGO), we developed a detailed scorecard to report annually on the performance of MPs. Each report card contained information about MP performance in three areas - plenary sessions of Parliament, committee work, and constituency service. While scorecards were produced and released publicly for all 319 elected MPs, we introduced variation in exposure to the transparency intervention in three ways. First, in December 2007, all MPs were informed that a random sample of constituencies had been selected for robust dissemination campaigns prior to the 2011 elections; these dissemination campaigns were implemented in a staggered manner between 2008 and 2010. Second, in the month before the 2011 election, we returned to a sample of constituencies that also received dissemination campaigns to distribute flyers with updated scorecard information. Third, as part of the baseline survey (in 2008) and the endline survey (in 2011), we provided a small, random sample of voters from across all constituencies with copies of their MP's scorecard.

Exploiting this variation in dissemination, and drawing on survey data, information about MP behavior, and official election returns, we present results in three areas. On voter attitudes, we find strong evidence from survey experiments that voters are sensitive to the information provided in the scorecard and update their beliefs. However, the effects induced by the survey experiment, if real, are short-lived. With respect to the behavior of MPs, although better performing parliamentarians (as measured by the scorecard) are more popular with voters, we find no evidence that MPs altered their behavior in anticipation of having to defend their performance in front of their constituents. Finally, examining the election results in 2011, we find no evidence that reelection rates for MPs were affected by the dissemination of the scorecard. In fact, despite high levels of media attention, constituents were largely unaware of the scorecard and how their MP performed. Constituents in areas with dissemination campaigns were significantly more likely to be aware of the scorecard; however, they were not in general better informed about their MP's performance. Indeed, on measures of constituency performance, there is evidence that voters in areas with robust dissemination campaigns had beliefs that were more poorly aligned with actual scores than in areas without dissemination.

Our paper contributes to a growing empirical literature on electoral accountability and political selection. Consistent with claims about information and accountability, a number of papers identify positive impacts of transparency on the effort of politicians and service

3

providers in both developed and developing world contexts (Alt et al 2001; Besley and Burgess (2002)). Some of these papers identify the critical role of media in transmitting information to voters (**?**), while other focus on the intersection of information and opportunities for community participation (Besley, Pande, and Rao 2006; Björkman and Svensson (2009)). The impact of transparency on selection has received less attention in empirical work, though recent research suggests suggests that, contrary to the predictions of arguments drawing on Downsian or Coasian logics, the characteristics of politicians appear to matter a great deal for the policies that are implemented (Chattopadhyay and Duflo (2004); Jones and Olken 2005). For example, Ferraz and Finan (2008) find that a municipal audit program in Brazil decreased the probability of incumbent reelection by 20 percent for each documented corruption violation. In a paper closely related to ours, Banarjee et al 2011 find that access to information about politician performance in India increased voter turnout, especially where incumbent performance was worse. Finally, a handful of studies explore the adverse effects of information (Datta, 2008; Gentzkow, 2010). For example, Chong, De La O, Karlan, and Wantchekon (2010) find that information about corruption depresses voter turnout in Mexico, while Malesky et al (2011) demonstrates that transparency leads to greater conformity (and non-participation) in an authoritarian parliament. These studies of adverse effects both rely on experimental designs similar to what we implemented in Uganda.

This paper extends the existing literature in two main ways. First, our design is set up to assess the impact of transparency on both accountability and selection. We can, therefore, explore how changing informational conditions affect the actions of politicians and the process by which political representatives are selected. This requires measuring changes in the attitudes and behavior of voters and changes in the behavior of sitting politicians. This focus on both voters and elites simultaneously is a new contribution, as prior work has relied primarily on measures of voter behavior.

Second, in contrast to many field experiments which are implemented on a small-scale in a subset of constituencies, Uganda's parliamentary scorecard became an important and hotly debated part of the national political process. The scorecard itself was produced for all Members of Parliament, and only the extent of dissemination was varied sub-nationally. While this raises inferential challenges related to possible spillovers, it more closely approximates how a robust transparency campaign might play out as part of an election campaign. Between its launch and the 2011 election, leaders of the ruling party and the opposition spoke regularly to the press about the scorecard; the government asked the ruling party caucus to investigate the methodology of the scorecard; and efforts were even made by MPs resistant to the scorecard to disrupt efforts to collect information about parliamentary performance. Given that a scaled-up transparency campaign has the potential to impact voter attitudes, it is natural to expect that MPs may respond by seeking to undermine the effort. Our results speak directly to the likely impact of transparency campaigns as implemented systematically and at scale as part of a contested electoral process.

We proceed as follows. In section 2, we introduce a simple model that reflects the key features of the intervention we examine and which we use to motivate a set of hypotheses on political accountability. In section 3, we relate these hypotheses to the Ugandan context (section 3.1), describe the intervention (section 3.2), and provide evidence for the validity of

information in the scorecard (Section 3.3). Section 4 describes the key sources of variation we exploit. Section 5 describes our main results: Section 5.1 provides results from two rounds of survey experiments to assess whether voters update their attitudes and beliefs. Section 5.2 provides evidence on the effects of transparency on MP behavior and section 5.3 provides results on the effects of transparency on electoral success and candidate selection. Section 6 examines possible explanations for the weak results and section 7 concludes with a discussion of the results and implications for our understanding of the role of political transparency in developing country political processes.

2   Transparency, Accountability, and Government Performance

On their own, elections may be insufficient to prevent opportunistic behavior and generate greater responsiveness to citizens' needs and preferences. In models of political agency and political selection, information asymmetries can undermine responsiveness and impede accountability in electoral democracies through a number of channels. We focus here on two, which can be termed the **agent accountability channel** and the **agent selection channel** (in some studies these are referred to as the **discipline** and **sorting** channels (Prat, Bar-isaac, Inderst, Lizzeri, Mailath, and Meyer, 2003). Both of these channels have been examined at some length in the formal literature.

The *accountability channel*, described as early as 1816 by Jeremy Bentham (see (Bentham, 1999)), emphasizes the ability of citizens to use the electoral mechanism to shape the incentives facing politicians (see also Barro 1973; Ferejohn 1986). In such models, politicians perform well because they fear being turned out of office if they do not. The extent to which they do so depends on the extent to which they value future returns from holding office. An uninformed citizenry, however, undermines the strength of the incentives mechanism and increases the scope for opportunistic politicians to shirk from their duties or to implement policies far from voters' ideals without electoral consequences (Buchanan 1989). Following this logic, transparency initiatives plausibly strengthen the incentives for incumbent politicians to perform well.

The *agent selection* channel emphasizes variation in the attributes of politicians. Without high quality information about candidates, voters are unable to "find those who are fit to serve" (Besley 2005). Political selection is thus impeded in information poor environments with distressing results (Azam, Bates, and Biais 2005). In Besley's (2005) model, politicians differ in their honesty, competence, and the extent of their public service motivation. Creating more accountable government depends on finding trustworthy politicians—a matter of selection, not incentives. He argues that higher-quality politicians will be more likely to enter electoral contests (and experience higher success rates) when voters are well-informed about candidate characteristics, as in a political environment with a vibrant media. In some models of agent selection, pure selection effects operate when incumbents are not simply unwilling but *unable* to alter their performance (Fearon 1999, Besley and Prat 2006). If accountability pressures can result in a change in behavior of poor quality politicians, however, this can in

5

some settings render the selection problem more difficult and may render it moot.

Finally, there are a set of what might be called *adverse channels*. While the accountability and agent selection channels provide rationales for why transparency may help, there are also theoretical reasons to believe that increased transparency may have adverse effects. As a general matter, more information about the actions of agents is typically better for principals (Holmstrom, 1979) to the extent that it allows them to write complete contracts. However, there are exceptions. Just as greater transparency may reduce competition among firms by facilitating the enforcement of collusive agreements, transparency could facilitate collusion among politicians to minimize the collective effort they expend on citizens. In contrast, a lack of transparency might lead to greater effort by political leaders to perform well in order to *overcome* the informational problems and demonstrate their capacity (Holmström, 1999; Dewatripont, Jewitt, and Tirole, 1999). Recently, Prat (2005) has shown that when outcomes are observable, but the relationship between actions and outcomes is better understood by the agent than by the principal, more transparency may lead to conformist action by agents and a reluctance to act on private information that could result in better outcomes. (Stasavage, Manin, Martin, Odell, Prat, Scheve, and Smith, 2004) develops a model in which transparency can result in a greater level of "posturing" by politicians; rather than reaching political compromises, politicians select bargaining strategies to signal their policy positions to constituents.

Although many models focus on only one or two of these channels, in our environment of interest the interaction of all three is likely to be important. To gain analytic insight into how these channels plausibly interact, we examine a simple model which allows us to examine the effects of three forms of voter uncertainty on a politician's behavior: uncertainty over the politician's preferences, uncertainty over the politician's actions, and uncertainty over the mapping between actions and outcomes. For related models that examine the first two types of uncertainty together, see Austen-Smith and Banks (1989), Banks and Sundaram (1998), and Fearon (1999); for models that also introduce uncertainty over the benefits of different policies, see Morris's model of "political correctness" (Morris, 2001), (Maskin and Tirole, 2004)'s model of "pandering", Prat (2005), and Stasavage (2004) on "posturing."

2.1   Model

We consider a two period game in which in each period an incumbent MP chooses action s from a set of two possible actions, $S = \{0, 1\}$, one of which benefits her constituents. Although known to incumbents, neither the action, the value of the action, or the motivation of the incumbent is known with certainty to the representative voter (we assume that voters in a given constituency have common preferences over the politician's actions). In particular:

- Voters receive a signal regarding the actions of the incumbent given by $\tilde{s} \in \tilde{S} = \{0, 1\}$. With probability $\varepsilon \in (0, .5)$ the signal $\tilde{s}$ is "false" and voters observe $\tilde{s} = 1 - s$; with probability $1 - \varepsilon$ they observe a "true" $\tilde{s} = s$. We define $\tau \equiv (1 - 2\varepsilon) \in (0, 1)$ as an index of transparency.

- The mapping from actions to outcomes is parameterized by $\eta \in \{0, 1\}$. With probability

6

$\varphi \in (.5, 1)$ the mapping η is "normal" in which case $\eta = 1$ and with probability $1 - \varphi$ the mapping is "unusual" and $\eta = 0$.

- The incumbent's "type" is given by $\theta \in \Theta = \{\theta_L, \theta_H\}$. With probability $q \in (0, 1)$ the incumbent is of a "High" type, with $\theta_H > 0$ and has the voters' interests at heart; with probability $1 - q$ however she is of a "Low" type, with $\theta_L < 0$ and has interests that diverge from those of the voters.[1]

The benefit to the population of action s is $\eta s + (1 - \eta)(1 - s)$. For example action $s = 1$ might be "tell the truth" or "turn up"; actions that are typically associated with benefits for voters. Unusually however, the population might instead benefit from action $s = 0$ rather than $s = 1$.

The benefit to an incumbent of policy action s is: $(\eta s + (1 - \eta)(1 - s))\theta$ to reflect the idea that high types prefer actions that benefit constituents; these actions impose a cost on low types however. The present value to an incumbent of type i of being returned to office is v_i which we take to be positive and normalize, for each type, to unity.

The voter's decision is simply whether or not to return the incumbent, a choice taken after observing a signal of the incumbent's Period 1 policy choice.

2.2 Equilibrium

This is a simple game of one sided incomplete information. We seek to identify the set of all perfect Bayesian equilibrium for the game. In addition, to simplify matters we focus on generic cases, ignoring $\tau = -\theta_L$, $\tau = \theta_H$ and $\theta_H = -\theta_L$. An equilibrium of this game consists of a strategy for each MP type in each state, $\beta_{\eta\theta} \in [0, 1]$, denoting the probability with which they select $s = 1$, and a strategy for voters for each observed action $\sigma_{\tilde{s}} \in [0, 1]$ denoting the probability with which they re-appoint the incumbent. In addition, we require that voter beliefs are consistent with Bayes' rule, although in the statement of the equilibria we leave this element implicit (these beliefs are however unambiguously given since with the noisy communication technology considered here all observations by voters may arise with non-zero probability for all possible strategy profiles).

Let us say that an incumbent "**conforms**" if she plays $s = 1$ in all states; that she "**chooses good policies**" if $\eta = 1 \leftrightarrow s = 1$ and that she "**chooses bad policies**" if $\eta = 1 \leftrightarrow s = 0$.

The main result of the model (given more formally in the online Appendix) is that which of these types of strategy is used in equilibrium depends simply on the size of the benefits of each type to implementing policy, θ, relative to the level of transparency, τ. In our analysis, we focus on four types of equilibria that can emerge depending on these values. Table 1 shows the four mutually exclusive and exhaustive combinations of parameter values ("environments"), and for each of these, we describe one equilibrium. In some of these cases, other equilibria exist although these equilibria either involve the use of "negatively responsive" strategies by

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[1]In Maskin and Tirole (2004), these types are referred to as "congruent" and "noncongruent."

	$\tau < -\theta_L$	$\tau > -\theta_L$
$\tau < \theta_H$	**Environment** A H chooses good policies; L chooses bad policies Incumbent returned iff $\tilde{s} = 1$	**Environment** B H chooses good policies; L conforms with probability $2 - \frac{1}{\varphi}$ and chooses bad policies with probability $\frac{1}{\varphi} - 1$. Incumbent returned with probability $\frac{-\theta_L}{\tau}$ if $\tilde{s} = 1$ and with probability 0 if $\tilde{s} = 0$
$\tau > \theta_H$	**Environment** C H conforms; L chooses bad policies Incumbent returned iff $\tilde{s} = 1$	**Environment** D H conforms; L conforms Incumbent returned iff $\tilde{s} = 1$

Table 1: Environments and Equilibria

voters, in which voters reward when they observe actions associated with poor performance, or involve mixing when pure strategy equilibria exist.[2]

To see the intuition behind these equilibria, consider first environments A, C and D. In these cases, pure strategies are used and voters return the incumbent if and only if they observe a signal associated with good behavior, $\tilde{s} = 1$.

Given such rewarding behavior by voters, the optimal strategies for incumbents are as follows:

- If $\eta = 1$, the incumbent will take action $s = 1$ (a good policy) if: $\theta + (1 - \varepsilon) \geq \varepsilon$, that is, if: $\theta \geq -(1 - 2\varepsilon) = -\tau$.

- If $\eta = 0$, the incumbent will take action $s = 1$ (a bad policy) if: $(1 - \varepsilon) > \theta + \varepsilon$, that is, if: $\theta < (1 - 2\varepsilon) = \tau$.

We have then that high types always take action $s = 1$ in normal times and low types always take $s = 1$ in unusual times. In addition, combinations of these conditions yield each of the cells in Table 1.

To check that the voter's strategy is supported by consistent beliefs, note that upon observing $s = 1$ the voter's beliefs that the incumbent is of type H in environment $Z \in \{A, C, D\}$, is given by:

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[2]Further conditions can be generated to rule these out if we allow voters to "select" the equilibrium by selecting performance standards. In this case we select equilibria on the basis of payoffs to voters. We note however that positively responsive equilibria are not always selected by this rule. To see why refer to the online appendix and consider the relative benefits of equilibria type $C(i)$ and $C(iii)$ when φ tends to .5 and q tends to 1. In the limit the difference in payoffs is $-\frac{1}{2}$ because with positive responsiveness the High type "panders" with probability $\frac{1}{2}$ but under negative responsiveness she always chooses good policies. Similarly, when obtainable, equilibrium $D(iii)$—a continuation of the equilibrium played in B—dominates $D(i)$ when q is high.

8

$$\tilde{q}(H|\tilde{s}=1,Z) = \frac{\Pr(\tilde{s}=1|H,Z)q}{\Pr(\tilde{s}=1|H,Z)q + \Pr(\tilde{s}=1|L,Z)(1-q)}$$

These posteriors are at least as great as the priors if $\Pr(\tilde{s}=1|H,Z) \geq \Pr(\tilde{s}=1|L,Z)$, a condition that holds, for $\varepsilon \in (0,.5)$ and $\varphi \in (.5,1)$ for environments A, C and D.

Environment B is somewhat more complicated. In this environment there are no pure strategy equilibria. To see why note that if voters could commit to pure reward behavior like that employed in environments A, C and D, then L type incumbents would conform and H types would choose good strategies. In this case, however upon observing a signal of bad behavior ($\tilde{s}=0$) the voter should infer that it is more likely that the incumbent is of a *high* type, taking an unusual action in unusual times. She will then have an incentive to return the incumbent, contrary to the proposed strategy. Similarly, a pure strategy of rewarding if and only if $\tilde{s}=0$ or rewarding (or punishing) independent of $\tilde{s}$ cannot be sustained.

A mixed strategy equilibrium does exist, however. For mixing to hold in equilibrium the voter's posterior must be exactly equal to q and any incumbents that mix must be indifferent between available policies. These conditions can be satisfied by strategies of the following form. In state $\eta = 1$, L plays $s=1$ with probability $2 - \frac{1}{\varphi}$. When $\tilde{s}=1$ the voters return the incumbent with probability $\frac{-\theta_L}{\tau}$; when $\tilde{s}=0$ the incumbent is removed.

If, for both types of incumbent, the value of contemporaneous policy choices is very high relative to the value of retaining office, then outcomes are independent of the level of transparency for all τ, and incumbents choose their preferred policies. Focusing then on the interesting cases in which $\theta_H < 1$ and $\theta_L > -1$, generically (that is, excluding cases in which $\theta_L = -\theta_H$) for any set of values for θ_H and θ_L, three outcomes can obtain, depending on the level of transparency.

In all cases, environment A occurs when transparency is low; and D occurs under high transparency. Which environment occurs for middling levels of transparency depends on which types place relatively more weight on present policy choices (relative to the future value of office). Thus for example with $\theta_H = \frac{1}{3}$ and $\theta_L = -\frac{2}{3}$, we can find A, C and D equilibria: A for $\tau \in (0, \frac{1}{3})$, C for $\tau \in (\frac{1}{3}, \frac{2}{3})$, and D for $\tau \in (\frac{1}{3}, 1)$; state B never arises. With $\theta_H = \frac{2}{3}$ and $\theta_L = -\frac{1}{3}$, we can find A, B and D equilibria: A arises for $\tau \in (0, \frac{1}{3})$, B for $\tau \in (\frac{1}{3}, \frac{2}{3})$, and D for $\tau \in (\frac{2}{3}, 1)$; state C never arises.

2.3   Hypotheses

We can extract a set of hypotheses that follow from the joint logic of accountability and selection implicit in the model. The *selection mechanism* in the model is the effect deriving from the propensity of voters to select politicians based on performance; the *accountability mechanism* is the effect deriving from politicians altering their behavior in anticipation of future support or sanctioning from voters. In the model, both effects operate simultaneously and interact. However, predictions from the full model may still be usefully compared with what would arise in cases in which (a) accountability mechanisms are not effective but selection mechanisms are (if for example voters respond to performance but politicians are incapable of altering their behavior for electoral gain) and (b) selection mechanisms are not effective

9

but accountability mechanisms are (which may arise for example if politicians misjudge how strategic voters are, or if politicians are responding to pressures from non-electoral channels).

The first hypothesis we examine on voter attitudes is immediate and holds whenever the selection mechanism is in operation.

H_1 (Voters' attitudes) Voters exposed to information that politicians are performing poorly ($s = 0$) should express greater dissatisfaction with the incumbent and a decreased willingness to support his or her reelection.

In addition, we have two hypotheses on the behavior of politicians, which hold whenever the accountability mechanism is in operation:

H_2 (Politicians' Behavior) On average, greater transparency will be associated with less shirking by politicians in advance of the next election (with "shirking" defined on the basis of public information).

This reduction in shirking, however, may also have adverse effects. As can be seen from movements between environments A and C, and B and D, a rise in transparency can sometimes be associated with a worsening in performance by high type politicians. This feature motivates our third hypothesis:

H_3 (Adverse Effects) Greater transparency will result in a substitution of effort by politicians from less observable actions to more observable actions, *even at a cost to the welfare of voters.*

Such adverse effects could include for example a substitution of effort by politicians from issues that benefit constituents towards actions in parliament that are intended only to improve scores. The concern is perhaps most eloquently described by Joseph Baidoe-Ansah, Ghana's Minister of Trade, Industry, & Private Sector Development when describing his concerns on BBC radio about the Uganda scorecard initiative.

> I mean you come from your constituency you realize there is maybe a village where water is not running, a place where there are all sorts of problems and you decide to book an appointment to go to talk to people who would not be in their offices when parliament closes. And you are torn between going there doing that work or going to just sit in parliament and then please the scoreboard [sic]. And I am saying that if that is what the judgment is then a lot of people will not really do what they are supposed to do for their constituents.[3]

We also have the following immediate prediction on electoral outcomes.

H_4 (Electoral outcomes) Greater transparency will decrease the reelection rate, vote share, and margin of victory of poorly performing incumbent politicians.

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[3]BBC World Service special feature on the scorecard (Date)

A number of other implications are drawn out in the online appendix, including the relationship between transparency and citizen welfare and between transparency and incumbency advantage. In addition, as we show in the appendix, the model predicts that the ability of the electoral mechanism to select for higher quality politicians is weaker in high transparency settings and that whether there are improvements or not in the quality of the candidate pool resulting from an increase in transparency depends on previous levels of transparency.

3 Transparency and The Ugandan Parliament

To examine the impact of transparency on political accountability and agent selection, we explore the relationship between Members of Parliament and constituents in Uganda. The potential governance pathologies that flow from information asymmetries pose a particular challenge in this environment. Uganda's voting population lacks access to a well-developed media that might transmit information about the characteristics or activities of politicians. Moreover, the problems posed by information asymmetries with parliamentarians are severe: constituents know little about the proper role and function of an MP and receive almost no information about the activities of MPs once they are elected. There are strong reasons to believe that the predictions of political agency and political selection models—of shirking, opportunistic behavior, and a mismatch between politicians' actions and citizens' preferences—are likely to be prevalent in Uganda's Parliament.

3.1 The Ugandan Parliament

The Parliament is the legislative arm of the Ugandan government and derives its mandate and functions from the 1995 Constitution. Elected for five year terms, the Parliament is composed of 215 MPs who represent geographic constituencies and 104 MPs representing special interests including women, youth, workers, people with disabilities, and the army—the Uganda People's Defense Forces (UPDF). In addition, there are 13 non-voting ex-officio members including cabinet members that are not otherwise members of parliament. Its functions are laid out in broad terms and include passing laws for the good governance of Uganda, providing for the financing of government business (through the authorization of taxation and the acquisition of loans), scrutinizing government policy and administration, debating matters of topical interest, and vetting the appointment of persons nominated by the President, including cabinet ministers and judges. Major bills passed by the present parliament include a series of amendments to legislation on excise tariffs, income tax, value added tax and appropriations.

It is important to examine how accountability works in this context for two reasons. First, although the executive branch exercises extensive power, the Ugandan Parliament has assumed an increasingly important role in political life in recent years. After a number of scandals that brought the prior Parliament into disrepute, including the approval of a constitutional change to allow President Museveni to run for another term, the election of the Eighth Parliament represented a shift to multi-party politics and the emergence of a well-defined opposition. Opposition MPs have been particularly vocal in Parliament, often staging walkouts to protest, for example, the detention and mistreatment of officials affiliated with

	NRM	Opposition	Independent	N/A	Total
Constituency Reps	139	47	20	0	215
District (Women) Reps.	57	10	12	0	79
UPDF Reps.	0	0	0	10	10
Persons with Disabilities	5	0	0	0	5
Workers' Reps.	5	0	0	0	5
Youth Reps.	4	0	1	0	5
Ex officio	3	0	0	10	13
Total	213	57	42	20	332

Table 2: Members of the 8th Parliament by Party and Ascendancy

opposition parties. As shown in Table 2, however, opposition MPs constitute a relatively small minority of Uganda's parliamentarians.

Nevertheless, the Parliament is seen by many as a critical linchpin in the effort to build sustainable democracy in Uganda. Outside donors have committed significant resources to the strengthening of the legislative (and the judicial) branch in an effort to check the growing power of the executive. It was hoped that, with the introduction of multi-party politics in 2006, Parliament would become a forum for the discussion of opposing viewpoints on critical national issues. In an early analysis of the workings of the Eighth parliament, Kasfir and Twebaze (2007) describe their "expectation that its committees will make effective contributions to bills and oversight" although they note that "it is still too early to tell how much of Parliament's [accumulated] influence [...] will survive the potent combination of party discipline in a party led by the President and controlling more than two-thirds of the seats" (Kasfir and Twebaze, 2007, 57).

Second, while Ugandan citizens are strongly committed to the independence of Parliament, they express significant concerns about the performance of their MPs (Afrobarometer 2005). 79% of Ugandans expect regular visits from the MP to the constituency (once a month or more), while 69% report that their MP never visits or comes only once a year. 77% of respondents complain that MPs never or only sometimes listen to their concerns. Nearly 70% believe that MPs are actively involved in corruption. And 40% describe elections as working not very well or not well at all as a mechanism for ensuring that MPs reflect the views of their voters. This skepticism about Parliament is not simply a Ugandan phenomenon. Mattes and Chiwandamira (2004) find a "yawning chasm" between citizens' views of MPs and how MPs see themselves in Zambia. More broadly, Nijzink et al (2006) report that, across a sample of African countries in which public opinion surveys were conducted, parliaments were almost uniformly viewed less positively than the executive branch, although respondents' average satisfaction with their own MP hovered in the range of 50-60%.

3.2   The Parliamentary Scorecard

Our experiment makes use of a parliamentary scorecard to explore the impact of transparency on accountability in Uganda. Beginning in 2007, the Africa Leadership Institute (AFLI), a Kampala-based NGO, partnered with Columbia and Stanford universities to develop, release,

and disseminate a parliamentary scorecard. Building on a parliamentary performance audit conducted in advance of the 2006 elections, the scorecard was designed to provide a high-quality, annual, and sustainable mechanism for delivering information to voters about the activities of their representatives—consistent with the constitutional right of citizens to access information about government.

The scorecard is based on a comprehensive database of the performance of every sitting MP. AFLI's informal consultations with MPs suggested that a focus on plenary, committee, and constituency work would be essential to capture accurately the distribution of activities in which parliamentarians engage. Because there is no regular source for information about the activities of MPs, AFLI organized a team of researchers to systematically collect, collate, and code raw data on the work of parliamentarians. The data sources for the scorecard include Parliamentary Hansards (verbatim transcriptions of every plenary session), transcriptions of committee meetings, attendance logbooks for plenary and committee sessions, majority and minority committee reports, annual surveys of sitting MPs, and data collected by AFLI in each constituency. Four scorecards were produced during the Eighth session of Parliament, with the final scorecard released just months before the 2011 election.

Each scorecard includes a series of indicators of performance for the year, generally presented as a percentile ranking in order to facilitate comparisons among MPs. The challenge in creating these measures was to identify indicators that were sufficiently clear in their measurement so as not to become the subject of dispute, but still rich enough to capture salient dimensions of political action. The scorecard included two types of measures: indicators of "**effort**" and "**position**." An example of the 2008-09 scorecard is given in Figure 3.2, with indicators of effort occupying the top half of the scorecard and positional indicators on the bottom. The scorecard included a number of distinct measures of effort; as these measures received the vast majority of media and public attention and were the only ones graded, we focus on them here.
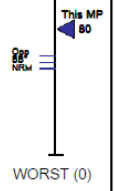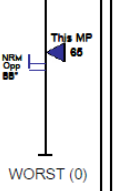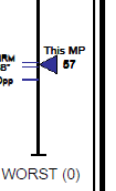
First, MPs were scored on their engagement in the **plenary** sessions of the parliament. MPs are obligated to attend plenary sessions. These meetings provide members with an opportunity to present the views of their constituents, raise new issues, and debate the important challenges facing Uganda. To produce an overall score for plenary performance, MP effort was evaluated using measures of attendance, participation, and debate influence.

Attendance was measured as the share of plenary sessions in which the MP's signature appeared in the attendance logbook (or is documented through the Hansard archives); this was designed to capture a minimal condition of political activity in plenary sessions.[4] Although one might expect little information from this measure, the empirical variation is dramatic. Overall attendance rates averaged 23 sessions out of 87 days of meeting. The best performers on this measure appeared over 50 times in parliament; however, 50 MPs showed up a dozen times or less and 3 never showed up at all.

Participation was captured using a simple quantitative metric—the total number of lines each MP spoke in the Hansard. Again, the measure picked up substantial variation; in fact, 40 MPs never participated at all on the floor of parliament.

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[4]In addition, if an MP spoke in plenary session (as captured in the Hansard) but was not recorded as in attendance in the logbook, we coded him/her as having been present at plenary that day.

Figure 1: A sample scorecard.

Finally, the scorecard introduced a measure of initiative to capture the extent to which MPs act as political entrepreneurs. This measure takes advantage of the fact that the introduction of new items, such as bills and amendments, to parliament, tends to associated with particular MPs, although disproportionately so with those already high up in a party's hierarchy. To generate a measure of initiative that is relatively immune to manipulation and which aims to take account of the importance of issues introduced, the scorecard employed an indicator that captured the total number of lines spoken by other MPs about items that a given MP initiated. On this measure, 39% of MPs were recorded as having had no influence on parliamentary debates.

On each of these individual elements, MPs received a percentile ranking. These rankings were then averaged to produce an an MP's overall score for plenary performance with a corresponding letter grade.

Second, MPs were scored on their activity in **committee work**. Much of Parliamentss work is conducted in committee sessions, where bills are reviewed and amended, budgetary decisions are made, and important oversight duties are performed. An approach that focused only on what happens in plenary sessions alone would run the risk of not giving enough credit to MPs for the activities they undertake behind the scenes. For committee work, MPs were scored again on both attendance and participation. The attendance measure was computed as the share of all committee meetings in which the MP's signature appeared in the committee logbook; the participation measure used tape recordings of all committee meetings (produced by AFLI) to generate an indicator of the average number of lines spoken by MPs per committee meeting. As with the measure of plenary performance, the percentile rankings were averaged to produce an overall score.

Finally, MPs were scored on their performance in **constituency work**.[5] MPs are elected by local constituencies and although these areas may be far from the halls of Parliament, MPs are obligated to maintain a presence in their constituencies. The scorecard recorded the MPs attendance at district meetings, whether or not they maintained a local office and local staff, whether or not they accounted for their Constituency Development Funds (CDF), how accessible they are to their constituents, and how involved they are in the lives of their constituents and the development of their constituency. To gather these measures, AFLI sent research teams to each constituency to verify the existence of a local office and staff, record attendance from the district meeting attendance books, and interview 8 randomly sampled constituents to generate a measure of MP accessibility, personal contact, and constituency service. Again, MPs were assigned percentile rankings which were averaged to produce an overall score.

Drawing on these measures, each MP's scorecard provided three headline grades: plenary performance, committee performance, and constituency service. Letter grades were included along with a visual indicator of the MP's ranking (with comparison to the average member of the ruling party and the opposition).

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[5]The initial scorecard did not include measures of constituency service. These were added in 2007-08, improved upon in 2008-09, but not included in 2009-10 because there was inadequate time to produce them in advance of the 2011 elections.

3.3 Validation

An obvious, first-order question is whether the performance metrics included in the scorecard accurately capture the relative quality of an MP's performance. One advantage of the approach taken by AFLI is that it involves almost no subjective judgments on the part of scorecard enumerators. Each measures is clear, defensible, and easily replicated. This was important to ensure the political viability of the exercise. However, one consequence was that the scorecard may provide insufficient information on issues that constituents care a great deal about. For example, does an MP make "valuable" comments? Can an MP get a bill passed or an amendment adopted if he puts his mind to it? Is an MP delivering on her campaign promises? The risk, of course, is that by publicizing simple indicators such as those in the scorecard, the transparency campaign might provide strong incentives for more "talking" but not for quality legislative activity. In this sense, the information provided is like the signal $\tilde{s}$ described in the model above; it is a good indicator of inputs, but the mapping between these inputs and benefits to constituents is not known with certainty.

In addition, the scorecard does not measure one output that many constituents may be most concerned with: the provision of pork to constituencies. A measure of spending on constituencies was not included for normative reasons: while there was a broad consensus on the value of providing incentives for more active and sustained participation in Parliament, there was substantial disagreement about whether the scorecard should provide additional incentives for MPs to raid the budget for pork for their districts. Unsurprisingly, perhaps, this is something that constituents expect from their MPs, but AFLI and its local partners felt strongly that including pork-barrel politics as a measure of performance would (a) systematically reward government MPs and (b) provide additional incentives for destructive budgetary politics.

Given these limitations, this section provides evidence of the validity of the scorecard measures. Specifically, we demonstrate that (a) scorecard grades closely track alternative methods of assessing MP quality and (b) scorecard evaluations are strongly related to voters' assessments of relative performance.

First, we compare the grades based on objective data on parliament to MP peer assessments of performance. The **peer assessment** measures were introduced in the 2008 scorecard using data from a survey of MPs in which each MP was asked to rank a random subset of 15 of their peers (stratified by party) on a set of six dimensions. For each dimension, MPs were asked to circle a number between 1 and 5, with top performers receiving a 5, above-average performers a 4, average MPs a 3, below-average performers a 2, and the least effective members a 1. Scores were then normalized to prevent manipulation by removing the average grade assigned by MPs to different sides of the house. The six dimensions of peer assessment are: quality and relevance of contributions in plenary and committee; how active the MP is in scrutinizing legislation; the MP's success in building support among other MPs for legislative activities; the MP's effectiveness in providing oversight of the activities of the executive; intra-party caucus influence; and conduct in public (whether the MP conducts him/herself in a manner befitting of an MP).

It is quite possible that the scorecard measure of MP performance does not capture what politicians know to be really important actions on the part of MPs. If so, then there would be

a poor correlation between scorecard measures and MPs' peer assessments—indeed, criticisms of the scorecard in media statements by various MPs suggest that this should be the case. For the peer assessment comparison, we compare 2008 peer assessments to 2008 plenary scores; the plenary scores do not use information on peer assessments and the peer assessments were made before 2008 scores were made available to MPs.

The results are shown in Figure 2. We see a very strong relationship between our score-card assessments and the MP's own estimations. The strong negative trend seen in the graph corresponds to a correlation of 0.41 between the raw plenary score and the overall peer assessment; the associated t-score is 7.5, confirming the highly significant relationship. Similar correlations can be seen for all the disaggregated peer assessments; the strongest correlations were for MP assessments of the quality of contributions to debate and the actions of MPs in executive oversight; the weakest was for the MP's conduct in public, although even in this case there is a strong relationship. Although many MPs argued that the scorecard measures do not reflect what is really going on in parliament, in fact they correspond very closely.
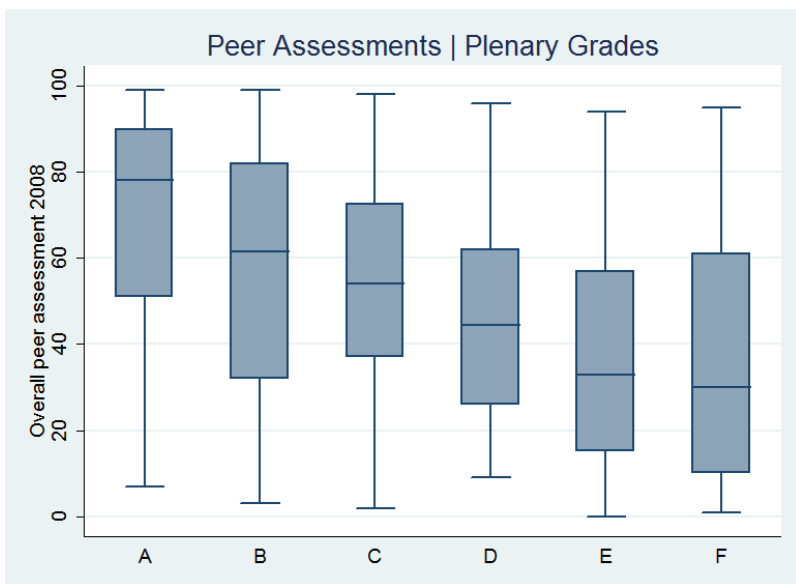
Figure 2: Distribution of 2008 peer assessment scores for MPs broken down by 2008 scorecard grades. The strong negative trend corresponds to a correlation of 0.41 which has an associated t-score of 7.5.

A second approach is to validate the constituency grades in the scorecard by comparing assessed grades with reports of constituency activity in the endline survey. Broadly, we find strong confirmation of the measure. In particular, we see that there is a strong and significant relationship between the constituency score and the likelihood that an MP has performed a service for respondents in the endline survey (see Figure 3), these trends obtain whether or not the respondents supported the MP.

Finally, we can use data from the baseline survey to assess the validity of the scorecard measures. Do the scorecard measures of performance correspond to ex-ante voter perceptions

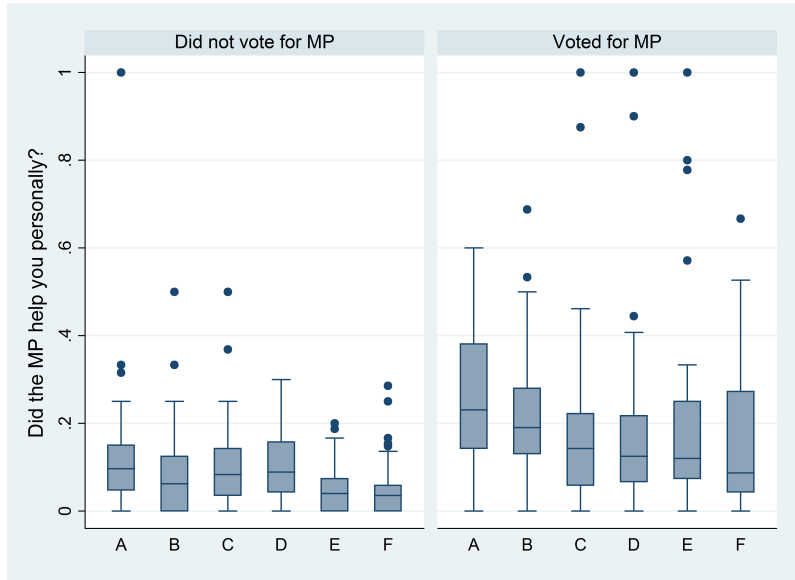Figure 3: Distribution of 2011 constituent reports of support from MPs broken down by 2010 scorecard constituency grades. The strong negative trend corresponds to a correlation of -0.31 which has an associated t-score of -5.44.

of incumbent performance? To answer this question, we implicitly address a joint hypothesis: do voters care about parliamentary performance and, if so, do their assessments correspond to our independent measures of MP quality? This is perhaps the most important validity test, as it is necessary to support the notion that scorecard dissemination might plausibly affect voter attitudes and behavior. For this test, we draw on information from voters in the control condition of the baseline survey—those not exposed to information on the scorecard—and we condition upon prior attitudes to the MPs in question.

Figure 4 provides an affirmative answer to this question. The dependent variable in the figure is the approval rating (1 - 4) of incumbent MPs and the figures shows a histogram of this approval, broken down by past support as well as scores from the scorecard (divided into quartiles). The figure shows that although past supporters in general rate incumbent MPs more highly, there is a strong trend towards higher approval as a function of scorecard measures of performance. The scorecard measures strongly predict the extent to which voters approve of incumbents, both for previous supporters and non-supporters. There is a 15% correlation for non-supporters and a 18% correlation for supporters, both of which are significant at the 99% level. In a regression framework, taking account of survey weights and cluster structures, we estimate that a one point improvement in our assessed score corresponds to a 0.1 point (for non-supporters) and 0.15 point (for supporters) gain in approvals, both significant at the 99% level. Importantly, the voters surveyed here did not have access to actual scorecard information when providing an approval ration, so this relationship serves as strong evidence for the validity of the scorecard.

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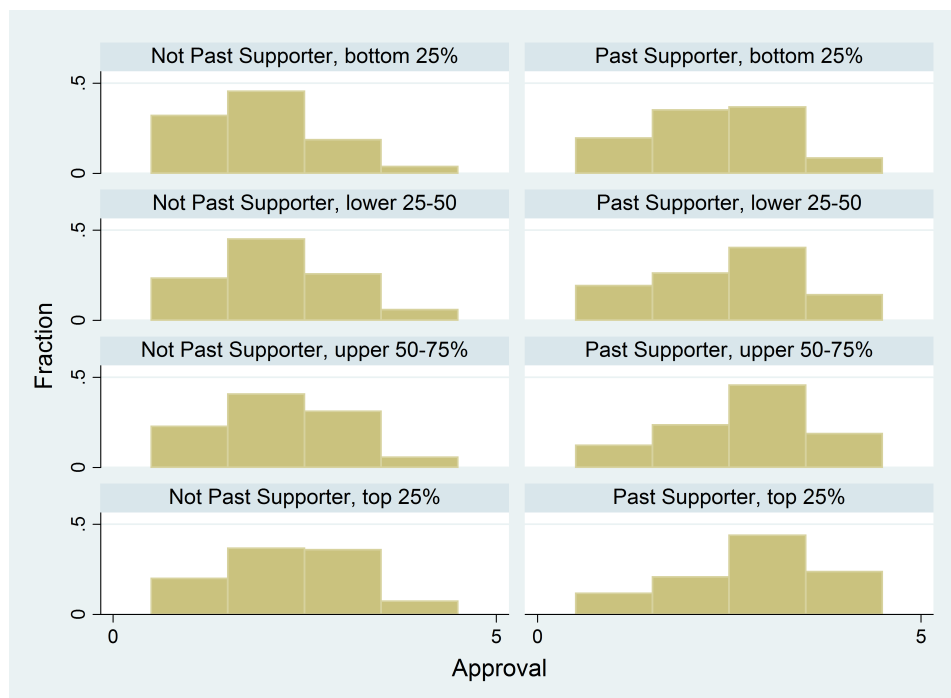
Figure 4: Approval of MP performance (measured at baseline) broken down by past support and scorecard scores.

4   Sources of Variation

For political reasons, the parliamentary scorecard was produced in the same way for all sitting MPs. It was released in Kampala approximately once a year, and copies of the scorecard were provided to MPs, civil society organizations, and representatives of the media. So while we are in a position to observe temporal change in the behavior of MPs, in the absence of an experimental design at the national level, we are not able to ascribe improvements in overall performance (if they occur) to the *existence* of the scorecard.

Our research strategy therefore rests on another source of variation: variation in the exposure of voters to the information contained in the scorecard. Our experimental approach involved intensifying exposure to the transparency information in three ways.

4.1   Survey Experiments

First, we embedded survey experiments in both the baseline and endline surveys of Ugandan voters. The baseline survey was carried out in October and November of 2008. A detailed questionnaire was administered through face-to-face interviews to 4300 adult citizens of voting age across Uganda. 20 respondents, balanced by gender, were interviewed in each of the 215 geographic constituencies for MPs. Within each constituency, two sub-counties were drawn at random and one parish selected at random within each sub-county. Households were selected using a random walk method, and respondents were selected randomly from among voting age individuals enumerated on a household roster. To ensure balance, 14 of the surveys focused

on the constitueny MPs while 6 focus on the district woman's MP.

The endline survey was carried out in April and May of 2011. A detailed questionnaire was again administered to 7772 voting age Ugandans. The sampling strategy was similar except the total number of clusters was doubled in each constituency. The two clusters visited during the baseline survey were revisited, and every effort was made to reinterview the 2405 respondents from the baseline who provided contact information that would enable us to relocate them. In addition, two new clusters were selected. In each cluster, approximately 8 respondents were interviewed.

In each survey, a random sub-sample of voters was exposed to the scorecard near the end of the interview. Near the end of the questionnaire, the enumerator would deliver a script providing information to the voter about his/her MP. The enumerator carefully walked the voter through the overall grades, the components of each grade, and the MP's percentile rankings. After the scorecard had been delivered and the voter's questions answered, the enumerator concluded the survey with a small number of final questions. In the baseline survey, one quarter of respondents received the survey treatment. In the endline survey, XX of respondents received the survey treatment.

4.2 Dissemination Campaigns

Second, we implemented sustained dissemination campaigns in a randomly selected sub-sample of geographic constituencies. Recall that 88% of Ugandan voters live in rural areas; only 18% have completed secondary school; and 60% never gets news from newspapers, which were the most active media source in covering parliamentary business (Afrobarometer 2005). The public release of the scorecard in Kampala was thus unlikely to reach voters in geographic constituencies via traditional media channels; moreover, the scorecard as published for dissemination in the capital was also not likely to be accessible to most voters given its publication in English and the literacy and numeracy required to understand the results.

In December 2007, we informed MPs that a random sample of constituencies had been identified for the intensive dissemination of scorecard results. To identify treatment constituencies, we conducted a lottery in which MPs were divided into blocks according to party affiliation (government, opposition, independent); ordered according to their overall (baseline) performance in the 2007 scorecard, and then, conditional upon a random draw, we selected either every even or every odd numbered MP. This procedure ensured that the treatment and control units were balanced with respect to party and with respect to the key baseline indicator (results not shown). 147 MPs were selected for disseminations campaigns, including both constituency and district (women) MPs. All MPs were informed about the sample of selected constituencies first in a personal letter from the President of AFLI in December 2007. The list of dissemination constituencies was then printed in each of the annual scorecards (with a schedule detailing the years in which each workshop would be carried out).

The dissemination campaigns proceeded as follows. Approximately 1-2 weeks before a scheduled workshop, AFLI representatives visited each constituency for a meeting with 10-15 influential community members from different sub-counties, including teachers, religious leaders, and civil society representatives. After describing the scorecard and the objectives of the planned workshop, each attendee received 25-30 invitation packets to share with others
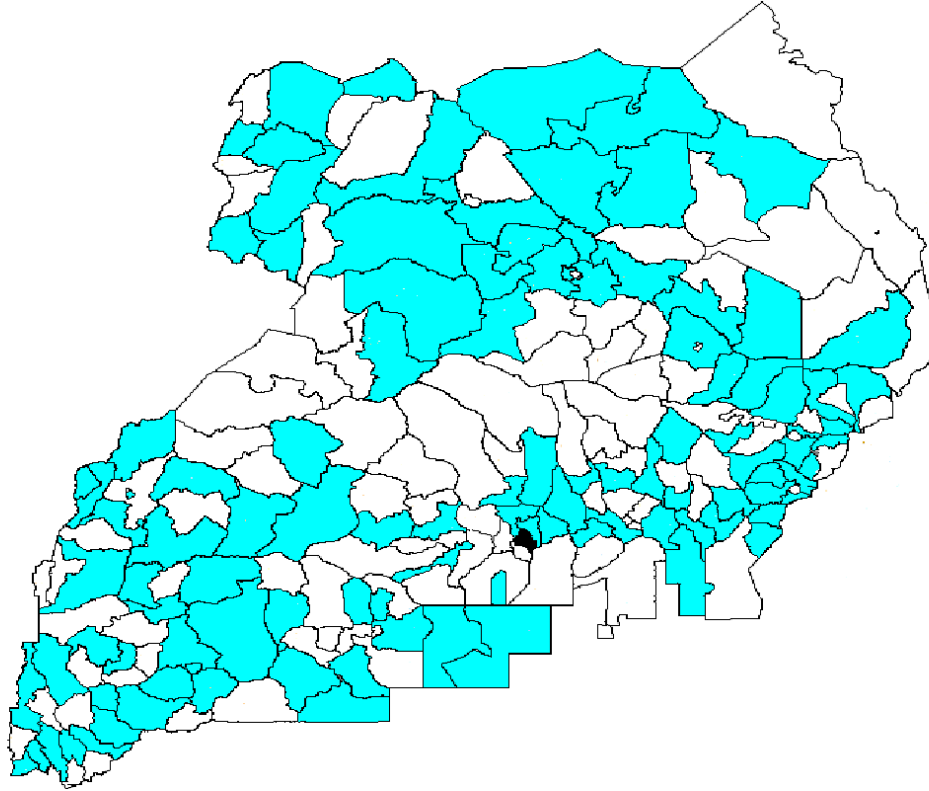
Figure 5: Map of selected constituencies for the dissemination campaign. Treated and control

in their sub-county; 30-40 posters (and tape) announcing the workshop; and a copy of the scorecard. In addition, community members agreed on the format for the workshop, including who would moderate, translate (if necessary), and which five individuals would serve on a panel to discuss the results and ask questions of the MP or his/her representative, if they were in attendance. Commitments were made by AFLI to provide food and drink, along with transportation refunds to a set number of attendees from each sub-county. In addition, AFLI staff visited at least three local media outlets (print and radio) to distribute a press release announcing the event.

On the day of the workshop, participants registered and received a workshop packet with locally-appropriate scorecard materials in local languages that summarized the results for each MP (including individual scorecards that people could take home and full-size posters to put in public places). Significant effort and pilot-testing went into the design of locally-appropriate scorecard materials; results were presented with very few words and no numbers. Images and pictures were used to represent the concept being measured and the MP's relative performance. A local community leader welcomed participants to the workshop and introduced representatives from AFLI who talked about the roles and responsibilities of an MP, the methodology of the scorecard, and the results for the local MP. Panelists then provided brief comments, and the MP or his/her representative was given an opportunity to respond. The workshop concluded with questions and answers from the participants. At each workshop, 400 packets were distributed and 1500 copies of the local language scorecard were handed

out to be shared more broadly. AFLI also identified a local organization that would receive scorecard materials in subsequent years for dissemination, though only one workshop was held in each constituency.

In total, workshops were held in the constituencies of 89 constituency MPs (of the 108 that were planned); 30 district woman's MPs (of the 39 that were planned) had workshops in their districts, oftentimes more than one as results for the district-wide MP were presented at the constituency workshops. Workshops averaged about 120 people in attendance (2/3 men, 1/3 women); MPs attended about 25% of the time, and sent representatives 50% of the time; and lasted an average of four hours. It is worth noting that AFLI was unable to hold workshops in a number of constituencies where MPs actively resisted dissemination of the scorecard and encouraged local officials not to cooperate or dispatched the police to prevent the workshop from taking place. In other cases, workshops were not held due to funding or other organizational challenges at AFLI.

4.3   Preelection dissemination

Third, in the month before the 2011 Parliamentary elections, we returned to a sample of treated constituencies to distribute flyers with updated scorecard information. Specifically, within each treated constituency, two polling station areas were randomly selected for the preelection dissemination effort. In contrast to the protocol for dissemination workshops which focused on sustained engagement with a sizable number of influential individuals, this effort was designed to blanket treated polling stations with scorecard results.

In each polling area, AFLI representatives delivered 250 flyers reporting the scores for both the constituency MP for the area and the district woman's MP. As each polling station serves approximately 250-300 voters, the goal was to ensure that almost every household received a copy of the scorecard before the election was held. Across all the polling station areas treated by preelection dissemination, nearly 60,000 copies of the scorecard were distributed. In addition, AFLI representatives endeavored to make contact with household members, wherever possible, to explain the scorecard methodology and help voters understand the results. On average, AFLI staff were able to make direct contact with 55 of the approximately 300 households in the polling station areas. This dissemination effort is most similar to the intervention described in Banarjee et al (2011), in which copies of newspapers with performance information on MPs were distributed to every household in a treated polling station area a few weeks before the election.

4.4   Quasi-experimental variation

Finally, at two points in our analysis, we exploit quasi-experimental variation. First, to assess the aggregate impact of the scorecard on MP behavior, we look for structural breaks in the performance of *all* MPs associated with the announcement of the scorecard initiative and the launch of the first scorecard. Second, we use a regression discontinuity design to assess the effects of scores on MPs' re-election prospects by assessing the effect of letter grades conditional on the effects of the underlying scores that produced those grades.

4.5 Measurement

Our analysis draws on measures developed in the baseline and endline surveys, the scorecard data generated by AFLI, and electoral returns data provided by the Electoral Commission of Uganda. Full survey instruments are available at [LINK].

5 Results

5.1 Do Voters Update Their Attitudes and Beliefs?

We employ data from the baseline survey and embedded survey experiment to address hypothesis H_1. This hypothesis predicts that voters will change their views on their MP when presented with new information about parliamentary performance.

In the baseline survey, each respondent was randomly assigned questions either about their constituency MP or about their women's MP, including questions about what they believed the role of an MP is and how they voted in the previous election, if applicable. Subjects were asked to provide an overall assessment of the performance of their MP, and to describe in detail the behavior of their MP on a set of distinct dimensions. In one of the two clusters in each constituency, a subset of subjects was then shown a copy of the 2007 scorecard, and the enumerator explained the scorecard methodology and the scores received by the subject's MP, expressed in percentile terms. Finally, at the close of the survey all subjects were asked again to describe their overall opinion of the MP and in particular whether (a) they approved of the MP (b) they felt the MP should be renominated by their party and (c) whether they intended to vote for their MP. It is worth emphasizing that we are analyzing an experiment that is delivered through a survey, rather than simply including an experimental component in the survey design; specifically, voters are being provided with information which may *alter* their positions, as distinct from designing a suite of questions in order to better *measure* preexisting attitudes.

The difficulty with assessing the effects of information on voter attitudes is that whether or not the information is new and whether it is good news or bad news depends on both the prior attitudes of respondents and the characteristics of politicians, both of which are beyond our control. The right way to think about this problem, which is reflected in our model, is that there are heterogeneous treatment effects of information which depend on these features of voters and politicians' performance. For estimation, we treat these features as strata and estimate average treatment effects within strata.

Figures 7 and 6 illustrate these average treatment effects for each combination of characteristics and for two different outcome variables, voter approval of the sitting MP and voter intention to support reelection. The horizontal axis gives prior approval of the MP (measured before the scorecard treatment was administered), and the vertical gives the MP's score on the parliamentary scorecard (averaged across the three dimensions and divided into quartiles). In the interior, the figure reports the treatment effects with confidence intervals. The outcome variable in 7 is the change in approval rating for the MP (measured on a scale of 1 to 4, where 4 is strong approval) over the course of the survey. The outcome variable in 6 is the change in the likelihood of supporting the MP for reelection. While we observe variation in the extent

to which stratum level treatment effects are significant, a strong trend is evident with positive treatment effects arising for individuals with low priors who receive positive performance information about their MP and negative treatment effects for those with high priors who receive negative information. Both of these results are consistent with expectations.
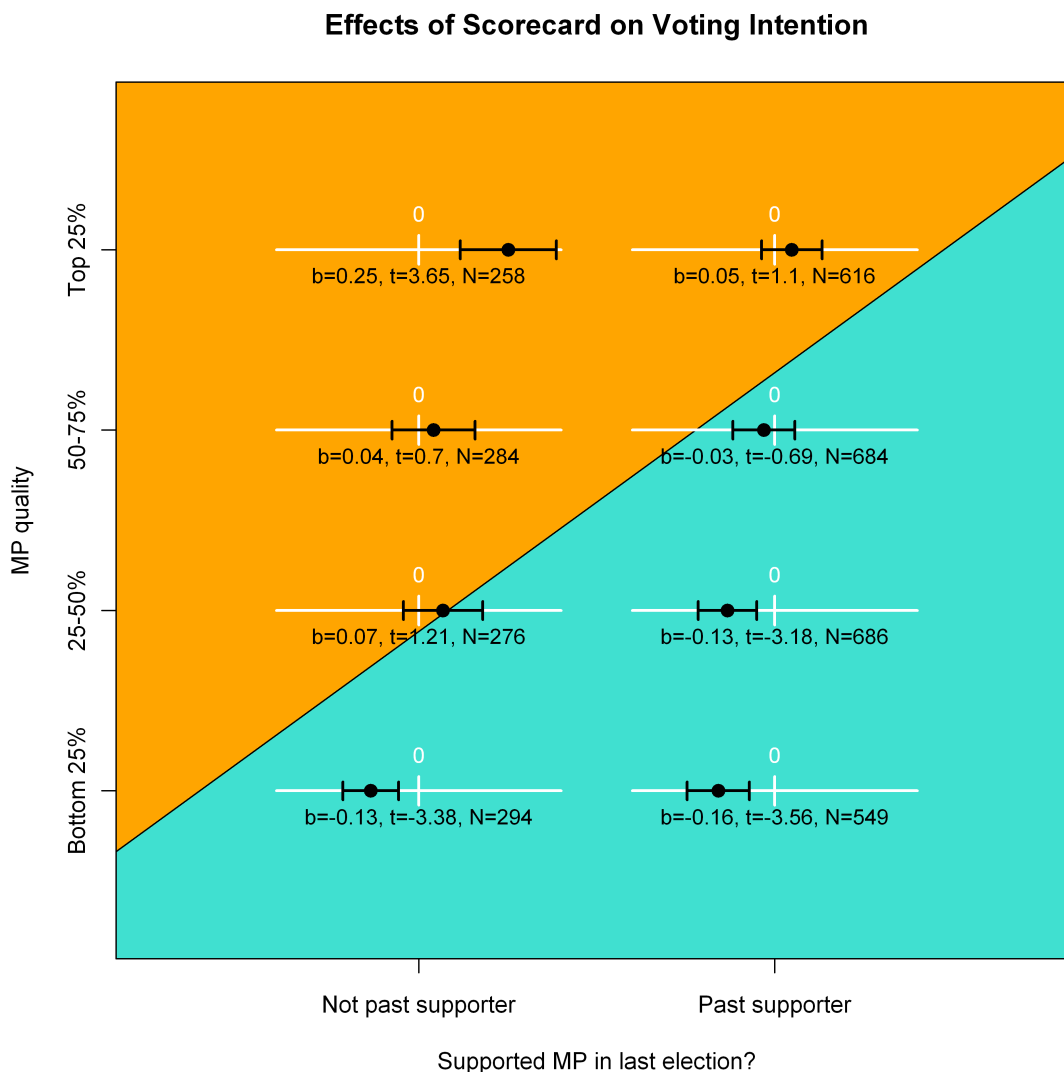
Figure 6: Treatment effects on approval broken down by prior approval rates and quartiles of actual scores.

The color pattern in these graphs is used to differentiate zones with positive and negative treatment effects. To identify these zones, we employ the following model which summarizes the stratum level treatment effects[6]:

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[6]We note that the stratum level treatment effects are estimated without recourse to any model.
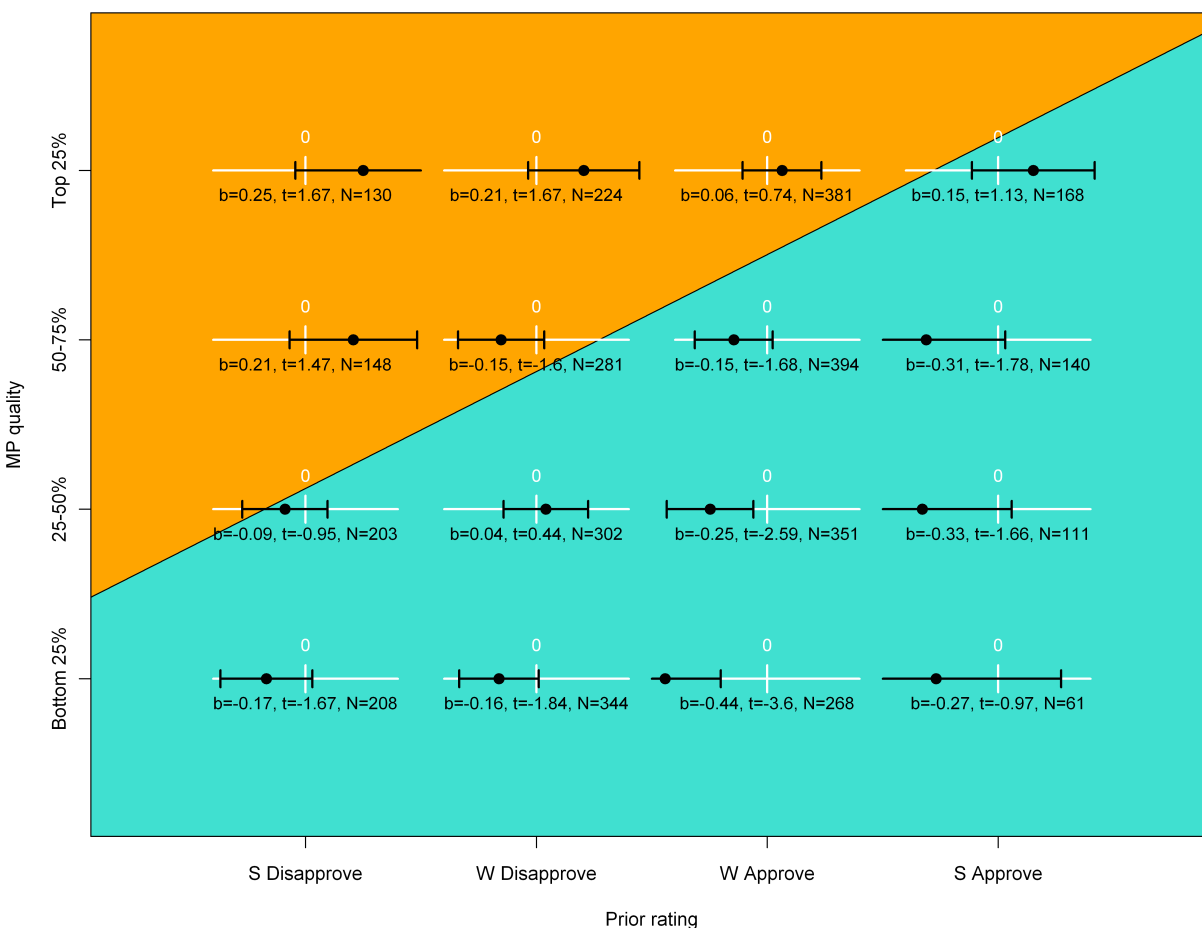
Figure 7: Treatment Effects on Voting Intentions broken down by prior approval rates and past voting behavior.

$$\hat{y}_{i2} - \hat{y}_{i1} = \alpha_0 + \delta\tilde{y} + \gamma(\tilde{y} - (\alpha_1 + \beta\hat{y}_{i1})) \times T + \phi\hat{y}_{i1} + \epsilon_i$$

Here $\tilde{y}$ is our independent measure of MP quality, $\hat{y}_{i1}$ is the respondent's initial estimate of quality, $\hat{y}_{i2}$ is the final estimate, and T is treatment. Turning to coefficients, δ captures 'reflection effects'—changes in responses that result from *internal information* only; $\gamma(\tilde{y} - (\alpha + \beta\hat{y}_{i1})$ captures a treatment effect whose sign depends on the extent to which the information gained from treatment is good news or bad news, that is, to the extent that $\tilde{y}$ is greater or less than $\alpha + \beta\hat{y}_{i1}$). Including α and β allows for the fact that $\tilde{y}$ and $\hat{y}_{i0}$ may be measured with different metrics, and allows for any affine tradeoff between them. γ captures the magnitude of the treatment effect in units of $\tilde{y}$; ϵ_i represents individual level shocks, which in practice we allow to be clustered at the level of the MPs in question; and ϕ captures regression to the mean effects.

Least squares estimates of these parameters yield the results given in Table 5.1. The coefficients on α and β determine the border between positive and negative treatment effects and are illustrated by the colored regions in figures 6 and 7. Other features are notable also: there is evidence of 'internal learning' whereby voter estimates align further with our won, once people are provided basic information and time to reflect. The internal inspection effect produces a change on the order of 0.1 points (on a four point scale); in terms of magnitude, this is about half the size of the scorecard treatment effect.

		(i) Δ Vote Intention	(ii) Δ Approval	(iii) Nominate (Level)	(iv) Δ Vote Intention	(v) Δ Vote Intention	(vi) Δ Vote Reported
Year Measured		(2008)	(2008)	(2008)	(2008)	(2008)	(2011)
Constant	α_0	0.137	0.064	0.097	0.126	0.173	0.361
		(0.022)***	(0.019)***	(0.012)***	(0.024)***	(0.048)***	(0.070)***
Reflection Effect	δ	0.144	0.071	0.067	0.147	0.105	0.044
		(0.034)***	(0.030)**	(0.017)***	(0.040)***	(0.08)	(0.09)
Treatment Effect (max)	γ	0.259	0.222	0.143	0.259	0.201	-0.016
		(0.048)***	(0.042)***	(0.027)***	(0.053)***	(0.13)	(0.13)
Scaling constant	$\alpha_1\gamma$	-0.076	-0.149	-0.053	-0.066	-0.089	-0.005
		(0.035)**	(0.027)***	(0.019)***	(0.039)*	(0.08)	(0.11)
	$\beta\gamma$	-0.124	-0.039	-0.099	-0.133	-0.095	0.013
Scaling slope		(0.035)***	(0.048)	(0.031)***	(0.042)***	(0.09)	(0.10)
	ϕ	-0.698	0.813	-0.296	-0.686	-0.706	-0.859
		(0.020)***	(0.024)***	(0.018)***	(0.022)***	(0.047)***	(0.053)***
R^2		0.35	0.29	0.15	0.35	0.33	0.37
Observations		3647	3580	3714	2806	610	621

Table 3: Effects of being shown the scorecard in 2008 on reported (changes in) support for politicians: (i) reported voting intention in 2008, (ii) approval 2008 (iii) desire to see MP renominated (level), (iv) reported voting intention in 2008, for subset for whom MP ran (v) reported voting intention in 2008, for subset for whom MP ran & for which we have 2011 voting data (vi) reported voting in 2011, for subset for whom MP ran & for which we have voting data. Standard errors are clustered at the level of MPs and are given in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Taken together, these results suggest a strong willingness of voters to incorporate new information and reevaluate their positions towards MPs, consistent with H_1.

While these results are strong, there is an obvious concern that survey responses reflect Hawthorne effects—in particular, voters may simply report preferences back to enumerators that are consistent with the information provided by enumerators, whether or not a real change in attitudes has taken place. Although we cannot estimate these Hawthorne effects directly, we can use data gathered on the same respondents during the endline survey (two years after baseline) to assess the joint hypothesis that the treatment effects observed in the baseline were both genuine and persistent. In the endline survey, we were able to resample approximately 50% of the respondents in the baseline survey.

The results are presented in the final column of Table 5.1. We see that the the survey treatment in 2008 has no impact on voting patterns in 2011, suggesting that the effects estimated in 2008 were short lived—if they were real at all. Note that we are able to recover the 2008 treatment effect among the resampled respondents (the effect in model (v) is similar

in magnitude to the effect in (i), but falls short of significance), which suggests that the failure to find an enduring effect cannot be attributed to sample attrition alone.

5.2 Do MPs Improve Their Performance?

Next, we turn to Hypothesis 2 and the reaction of MPs to the parliamentary scorecard. In particular, we look for evidence that the transparency intervention caused MPs to improve their performance in advance of the 2011 election.

We begin by noting that anecdotally the scorecard evoked strong responses among MPs. When the scorecard was first released, it was met with anger by many MPs. As described by the leader of the opposition, Prof. Morris Ogenga Latigo: "The angry reaction from the MPs was not surprising. They shoot and ask questions later. I will not be surprised if they only read the headline in The New Vision and reacted. If there is any stamp of approval for what you are doing, it was the reaction of Parliament."[7]

However, it was apparent that views also changed over time. According to another account in the New Vision newspaper, the leader of the opposition who previously supported the card announced later a revised view: "We reject this scorecard because its intention is clear, said Prof. Morris Ogenga Latigo, the leader of opposition in Parliament. He said the scorecard was becoming a propaganda tool of those against performing opposition MPs.[8]

Prime Minister Prof. Apolo Nsibambi (in a message delivered by Minister Omara Atubo and reported by the New Vision) stated: "I support this exercise. I am happy about it." Atubo said: "Our MPs should humbly accept to be assessed. No politician should be shy about this assessment." [9] At another point, however, the NRM chief whip in parliament, Daudi Migereko spoke out strongly against the scorecard and ultimately the ruling party caucus initiated a formal review of the scorecard and its methodology.[10]

5.2.1 Aggregate Impact of the Scorecard

Because the scorecard was produced for all MPs, it is natural to ask whether MP behavior improved over time. The evidence suggests that there were marked improvements in the performance of parliament, particularly with respect to the attendance of MPs. Some have suggested that these gains are a result of attention generated by the scorecard. For example the BBC reported:

> Parliamentary attendance shot up after the cards were published for the first time last year and revealed that MPs on average turned up for only a quarter of sessions.[11]

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[7]New Vision: MPS dodge district meetings Friday, 30th November, 2007

[8]New Vision: Latigo disputes legislators' ranking. Wednesday, 28th July, 2010

[9]New Vision: MPS dodge district meetings Friday, 30th November, 2007.

[10]The Observer. "Pulkol's scorecard used wrong parameters" Sunday, 14 June 2009 16:16

[11]BBC. 28 May 2009. "Uganda MPs issued with scorecards." http://news.bbc.co.uk/2/hi/africa/8072437.stm accessed 29 Feb 2012.

But establishing this attribution is difficult in practice as variation in exposure to our dissemination treatments cannot account for absolute trends. Aggregate effects can be assessed however by examining changes in MP behavior as a function of critical events that raised awareness of the scorecard among parliament in general.

Figure 8 graphs overall attendance in parliament over time, as well as the total length of parliamentary interventions (in lines) and the number of interventions per MP. We identify three major moments when media and the attention of politicians was drawn to the scorecard: first, at an early awards ceremony for high-performing MPs from the 7th Parliament, to which a random set of MPs was invited and in which the plans for the new scorecard were described in detail; second, when the first scorecard was launched and; third, when the second scorecard was launched.

There is some evidence that the scorecard changed MP behavior in the aggregate. For example, we see from the figure a large early increase in attendance rates in parliament. A relatively small part of these gains can be attributed to the scorecard, as evidenced by discontinuous increases in average attendance rates after the first and second shocks. These jumps, however, prove to be relatively small and short-lived, and swamped by more secular trends. The third shock (which occurred at a time when the scorecard was already known to all MPs) was associated with a decline in attendance. In addition, there is no notable trend in parliamentary interventions, except a modest rise towards the end of the parliament. There was a large jump in total interventions in parliament following the launch of the scorecard; as evidenced by the second and third graphs, this jump is attributable to an increased number of MPs speaking rather than longer interventions on average.

5.2.2 Impact of Scorecard Dissemination

While the aggregate data point to some gradual improvements in raw attendance rates (and participation, at least in the early years), there is not strong evidence that these gains can be attributed to the scorecard. To assess this more directly, we compare scorecard performance between those MPs that were randomly selected to have dissemination workshops, and those that were not. Recall that all MPs were informed in December 2007 if their constituency was selected for a workshop, and this information was published in each of the annual scorecards. If an MP's expectation of having to defend his or her record in front of constituents led to efforts to improve performance, this would appear as a systematic difference in performance scores between those that were selected for workshops and those that were not. The evidence in Table 4 suggests that this was not the case: selection for a dissemination workshop had no significant impact on any of the three measures of MP performance or on peer assessments of performance. Indeed, the estimated effect is negative (though not significant) on three of them.

Hypothesis 3 identifies the prospect of adverse effects of the scorecard. Is it possible that the scorecard induced politicians to reduce effort in areas that may generate benefits for constituents but that are not recognized on the scorecard? Table 5.2.2 provides results on six outcome measures for constituency MPs using data from the endline survey. Table 8.3 in the online Appendix provides the same analysis for district MPs. The first three measures capture whether respondents reported that the incumbent MP had taken actions that benefited them
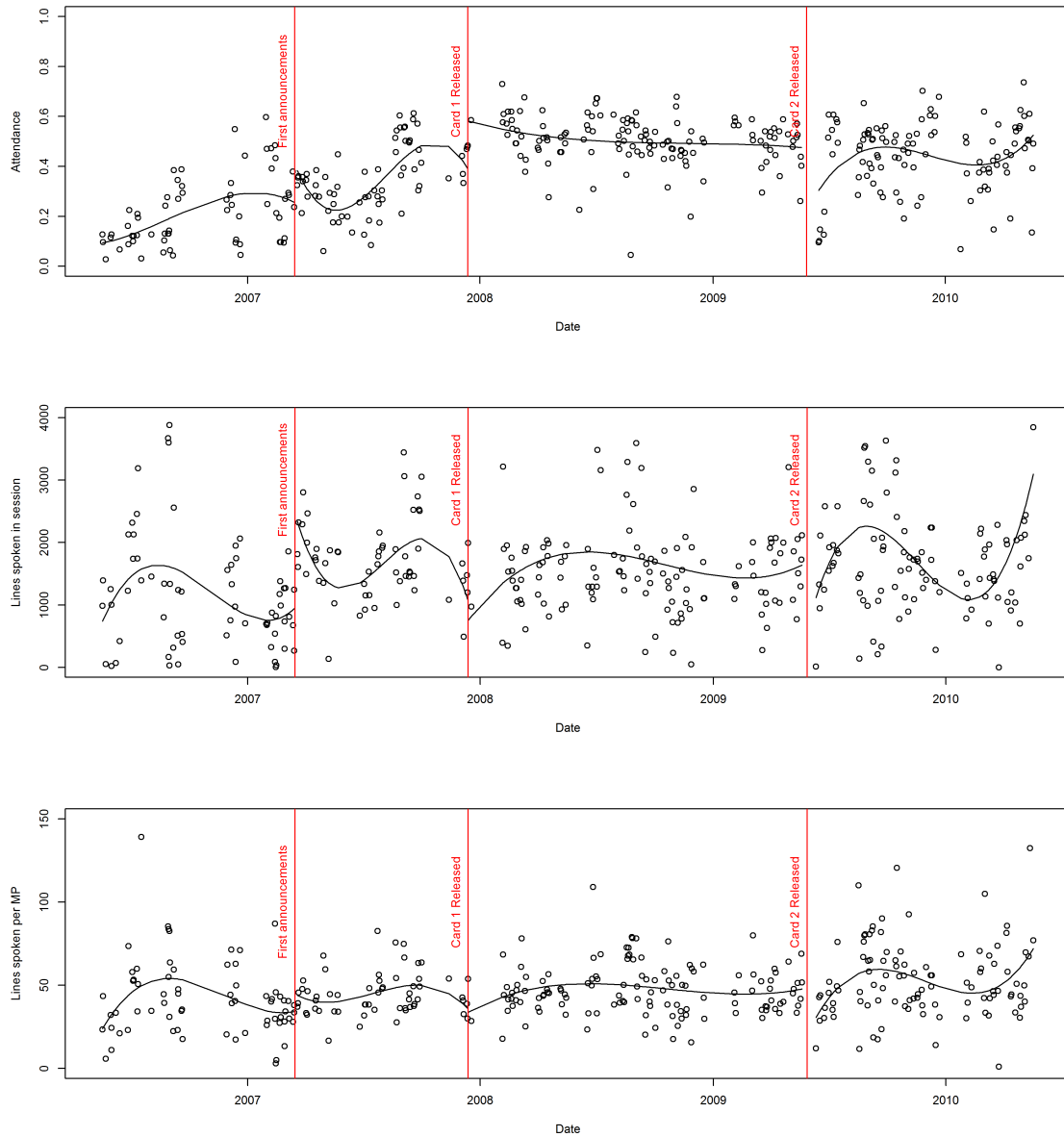
Figure 8: Figures show the changes over time in the numbers attending and in the volume of discussion in parliament. Cutoffs mark key moments of publicity for the scorecard. Lines mark third degree polynomial fits for each section. An AR(2) model with structural breaks suggests that the release of the first scorecard created a significant structural break in the series.

personally, the constituency as a whole, or the nation. The last three report the share of days in which primary school teachers are absent (according to parent reports), the respondent's self assessment of their welfare relative to other Ugandans (normalized to range from 0-1), and a measure of the share of days in which respondents were employed (among respondents

	Plenary	Committee	Constituency	Peer Assessment
Workshop Effect	-4.736	-2.255	1.096	-0.673
	(1.42)	(0.61)	(0.32)	(0.19)
Control Average	53.640	52.844	49.116	51.104
	(22.97)***	(20.35)***	(20.52)***	(20.53)***
N	296	239	292	265

Table 4: The estimated effect of dissemination workshops on parliamentary performance (dependent variables are percentile scores at the latest points of measurement (2010 data)). t-stats in parentheses; * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

working or seeking work).

	Action for Respondent	Action for Nation	Action for Constituency	Teacher Absenteeism	Relative Welfare	Employment
Workshop Effect	-0.022	-0.023	-0.036	-0.015	-0.026	-0.044
	(1.39)	(0.80)	(1.07)	(0.89)	(2.05)**	(1.61)
Control Average:	0.150	0.266	0.495	0.127	0.194	0.561
	(12.58)***	(11.78)***	(20.64)***	(9.26)***	(21.00)***	(28.33)***
N	5,387	4,374	5,116	2,647	5,403	3,745

Table 5: Adverse effects at the constituency level. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Standard errors clustered at the constituency level.

Across all six measures, there is a negative relationship between dissemination workshops and measured outcomes, although in most cases the relationship is statistically weak. An analysis of an index formed by averaging these 0-1 measures yields a negative effect which is weakly significant at the 10% level.

Taken together, these results provide little evidence that MPs improved their performance in response to the dissemination of the scorecard, and suggest the possibility that there may have been adverse effects.

5.3 Does Transparency Affect Electoral Outcomes?

To assess the effect of greater transparency on electoral outcomes (Hypothesis 4), we examine whether scores are more or less likely to affect outcomes when workshops are held in an MP's constituency. Formally, we look for a (positive) interactive effect between the presence of a workshop and MP scores.

In Table 6, we use intention to treat estimates to examine three outcome variables: whether an MP ran for re-election, whether an MP was re-elected (where 0 outcomes include MPs that did not run), and the vote share garnered by the MP (conditional on running). We examine

the interaction with scorecard percentile scores on all three performance dimensions. Table 8.3 in the online Appendix provides the local average treatment effects of holding a workshop, which are very similar.

	Elect	Elect	Elect	Ran	Ran	Ran	Share	Share	Share
Workshop	-0.023 (0.19)	-0.068 (0.51)	0.054 (0.48)	-0.068 (0.67)	-0.044 (0.39)	-0.006 (0.07)	0.027 (0.49)	-0.067 (1.06)	-0.016 (0.30)
Interaction	0.000 (0.05)	0.001 (0.38)	-0.002 (0.80)	0.001 (0.77)	0.001 (0.37)	-0.000 (0.03)	-0.001 (0.62)	0.001 (0.90)	0.000 (0.26)
Plenary pct	-0.000 (0.08)			0.000 (0.27)			-0.000 (0.61)		
Committee pct		-0.000 (0.24)			0.001 (0.45)			-0.001 (0.97)	
Constituency pct			0.004 (3.05)***			0.002 (1.35)			0.001 (2.24)**
Constant	0.462 (5.29)***	0.464 (4.74)***	0.242 (2.97)***	0.758 (10.37)***	0.746 (9.05)***	0.700 (10.06)***	0.478 (12.19)***	0.486 (10.69)***	0.385 (10.40)***
N	293	239	292	293	239	292	227	185	227

Table 6: Intention to treat estimates of dissemination workshops. In each model the 'interaction' variable is the interaction between the workshop treatment and the score in question. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$
.

Across all three performance measures, the interactions are indistinguishable from zero suggesting that workshop dissemination did nothing to alter the relationship between MP performance and re-election rates.

It is important to note that the positive unconditional effect of constituency scores on re-election rates suggests that measure captures an element of MP quality important to voters—but the importance of the measure does not depend on the intensity of scorecard dissemination. A simple analysis suggests that this relationship between constituency scores and re-election cannot be attributed to the scorecard itself or knowledge of the scorecard among voters. We examine the effect of grades conditional upon raw percentile scores using a regression discontinuity design. In doing this, we effectively compare re-election propensities for individuals who ranked in, for example, the 84th percentile and scored an A with individuals in the 83rd percentile who scored a B. If grades mattered for re-election, then the former should fare better than the latter, even though their actual performance was very similar.

As one can see in Figure 8, re-election propensities are sensitive to raw percentiles; however, being marginally above a grade threshold (marked in red) does not in general lead to any increase in re-election rates. The implication of this analysis is important as it suggests that *the weak relationship between greater transparency and electoral outcomes cannot be attributed to the particular dissemination campaign employed*, but to all ways in which the scorecard results might have been disseminated (e.g. including national-level media and radio).

Although we do not present results from the endline survey here, they are consistent with the findings from official electoral returns. There is no evidence that dissemination workshops changed the relationship between MP performance and the likelihood that respondents support re-election across all of the performance dimensions. These non-results hold for the

preelection dissemination as well. Even in clusters that were blanketed by scorecard information in the weeks before the election, voter behavior was unchanged by the new information.
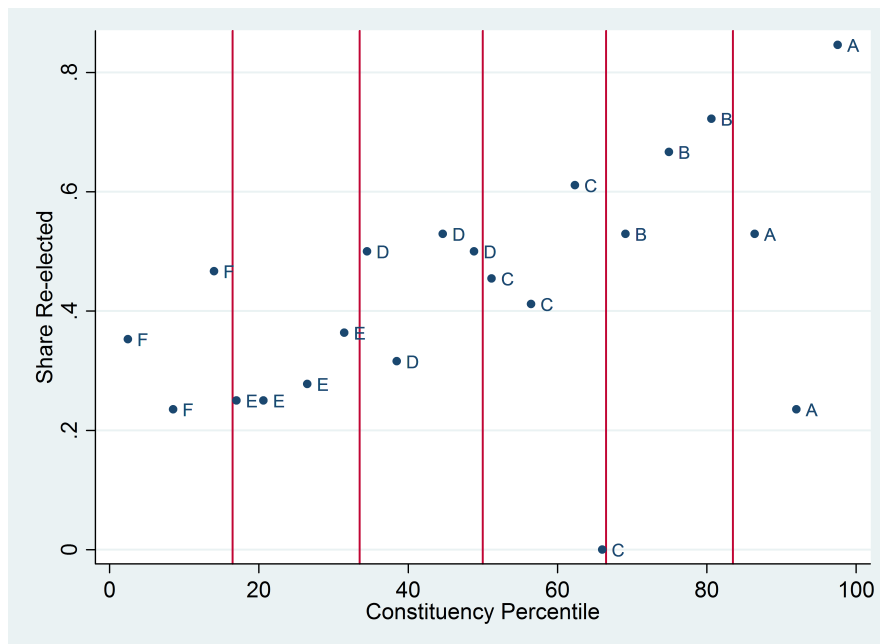

Figure 9: Effect of letter grades on outcomes. Bars indicate the cut-offs for different grade allocations as a function of percentiles.

6   Discussion

The empirical results so far are clear: greater transparency about the performance of MPs appears to have little impact on the strength of accountability relationships between politicians and their constituents. Given the evidence of transparency's beneficial effects in other contexts, what might account for the weak results we uncover in Uganda?

There are a number of distinct possibilities. First, our study might suffer from a weak "first stage". In practice, it may have been the case that the various dissemination campaigns failed to increase awareness among voters of the performance of Ugandan MPs. There are two ways of thinking about this issue: there are both "implementation" and "political" versions of a weak first stage. For example, it is possible that the dissemination efforts failed because of how they were implemented (e.g. because they were too small or reached out to individuals and groups that are not influential). The first stage might also have been weak because actual political processes *undid* the information gains generated by the dissemination of the scorecard. We examine both of these possibilities.

Second, the scorecard may have had little effect because the information provided was not relevant to individuals' political calculations. We provide two sets of analysis to explore this possibility.

Did the dissemination campaigns increase awareness of the scorecard? The endline data suggest that respondents in constituencies with dissemination workshops were indeed significantly more likely to be aware of the scorecard (Table **??**); however, people in areas with workshops focused on district women MPs were not, and perhaps most surprisingly, those in areas with preelection dissemination campaigns did not exhibit greater awareness.

In our endline data, 12.2% of respondents reported knowing of the scorecard. The rate is 10.6% in constituencies without workshops and 14% in constituencies with workshops. This represents a 32% increase, which is significant at the 99% level. This effect is substantively large as well, as 3% of the electorate corresponds to approximately half a million voters (although as we note elow, this number is not large relative to the margins of victory often enjoyed by winners in Uganda elections).[12] However, only about 1% of respondents (and 8% of those that had heard of the scorecard) knew that AFLI was responsible for the scorecard.

	Group 1: Repeat cluster, Subject not exposed in 2007	Group 2: Repeat cluster, Subject exposed in 2007	Group 3: New cluster, No 2011 dissemination	Group 4: New cluster, 2011 Dissemination	All
No Constit Workshop	0.115	0.325	0.085	0.076	0.11
	1,807	117	1,730	157	3811
Constit Workshop	0.158	0.338	0.163	0.104	0.14
	1,747	130	172	1,722	3771
Effect	0.04**	0.01	0.08	0.03	0.05***
(sd)	-0.01	-0.08	-0.06	-0.02	-0.02

Table 7: Effects of workshop on knowledge of existence of scorecard. The effect of workshops is assessed for different strata (columns) as well as overall (final column). Final column effect sizes calculated using linear controls for strata. All standard errors are calculated with clustering at the county level.

However, there is no effect of district women's workshops on reports of knowledge of the scorecard. More strikingly, there is no effect of the preelection dissemination campaign on knowledge of the scorecard. The dissemination campaign appears to have been entirely ineffective in getting the message out about the scorecard (indeed comparisons of Column 3 and Column 4 in Table 7 above shows that in dissemination areas people were less likely to report knowing the scorecard). This, despite the fact, that treated clusters were blanketed

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[12]We also have reason to believe that this number greatly underestimates the effects of the workshop. Because of unusual patterns in this data (in particular the low rates of reported knowledge among subects that we knew were exposed to the scorecard in 2008) we revisited 60 clusters (3 in each of 20 constituencies for a total of close to 500 respondents, with selection of revist clusters heavily weighted towards dissemination and workshop areas), asking the same question but with a stronger probe ("The scorecard is a report card for MPs, it assess their behavior in parliament and constituencies. There is one for every MP. Have you heard about this?"). With this stronger probe 63% of respondents reported knowledge of the scorecard. As in the larger sample, there is no evidence for knowledge gains attributable to the district workshops or the dissemination campaign, but there are gains attributable to the constituency workshops. Specifically in non-workshop areas 45% reported knowing of the scorecard, compared to 65% in workshop areas. This 21 percentage point gain is large and significant at the 95% level.

with scorecard information through the preelection effort, paralleling the design in Banarjee et al (2011).

The second possibility is that dissemination workshops increased knowledge about the existence of the scorecard, but did not lead to increased knowledge of MP performance. Specifically, since workshops provided a forum for both sitting MPs and the opposition to "interpret" scorecards for constituents, it is possible that workshops, if dominated by particular actors, weakened the impact of the scorecard on voter knowledge of MP performance. Indeed, efforts to counteract the scorecard or obfuscate understandings of MP performance might have occurred simply as a result of the expectation of a workshop, independent of any direct effect of the dissemination workshop.

While we do not have systematic evidence on the actions taken by MPs to counteract the scorecard in their constituencies, initial evidence from our endline surveys suggests that such obfuscation may have happened in practice. As Figure 10 demonstrates, constituent guesses of MP performance are surpris
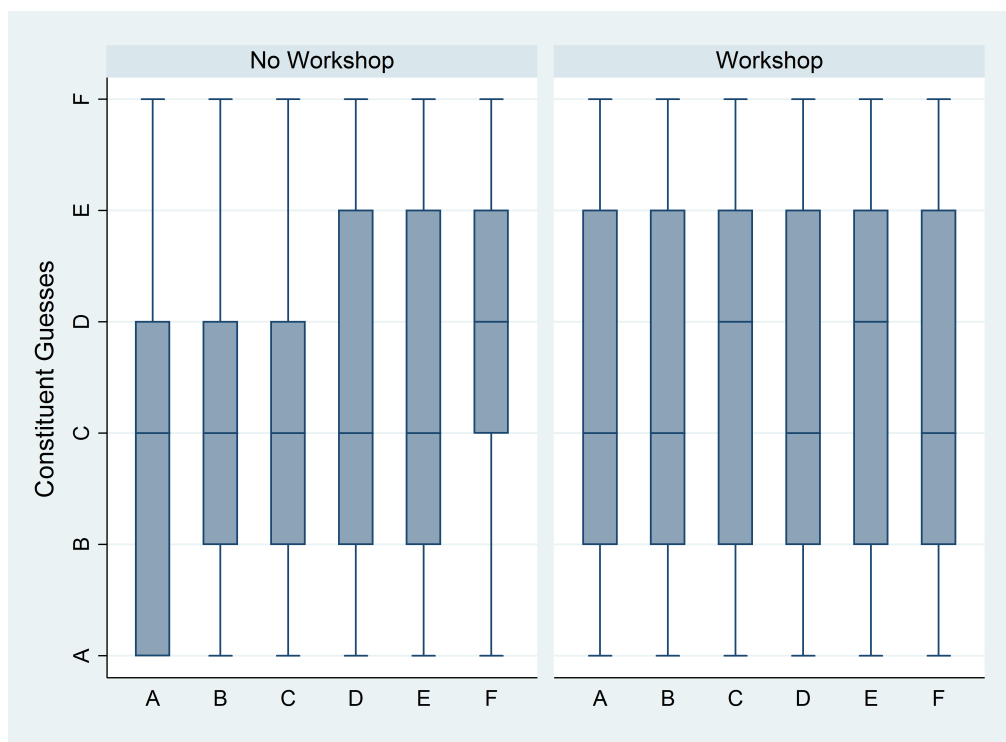
Figure 10: Figure shows distribution of guesses on MP (plenary) performance, broken down by true scores of MP performance. Workshops are associated with *less* accurate information about MP performance.

Alternatively, might the weak results on impact be due to the political irrelevance of the scorecard in the eyes of voters and MPs? Ultimately, the impact of transparency on accountability is likely to depend on the competitiveness of electoral politics. If politicians enjoy large electoral margins, they may be relatively insensitive to transparency efforts. Similarly, if politicians are expected to enjoy large margins, voters will have weak motivations to vote

on the issues identified in our model. How insulated are politicians in Uganda? From one perspective, it is clear that they are not very safe: of the 228 incumbent MPs that ran for re-election, only 132 (58%) won. However, in general, electoral contests were won by large margins. The median winning margin was 19 percentage points and 75% enjoyed a margin of 9% or more. These numbers are large relative to the number of voters that are aware of the parliamentary scorecard.

A second possibility is that what matters to politicians is not how they are perceived by constituents but how they are perceived by, and supported by, their peers. This is especially likely to be true in a political system dominated by a single party, where access to state resources and political backing depends on hewing to the party line. We can assess this possibility by examining the effect of peer assessments of MP quality on re-election rates. The results suggest that peer assessments are stronger predictors than constituency or plenary scores of whether or not MPs run again for office, and they are equally as strong as constituency scores in predicting whether MPs are re-elected. Constituency scores do retain predictive power, however, even accounting for peer assessments (results not shown).

Although these tests are not conclusive, they do shed light on factors that may account for the weak impact of greater transparency on the performance of politicians in Uganda. A number of the dissemination treatments were wholly ineffective; however, dissemination workshops at the constituency level, which engaged perhaps 10,000 people directly, are estimated to have increased knowledge of the scorecard by nearly 500,000 voters in Uganda. Dissemination campaigns might have been stronger, but meaningful increases in awareness of the scorecard were achieved. Instead, it is more likely that the limited impact of the scorecard is related to two other factors: first, the impact of politicians on how voters understand the information revealed in the scorecard and second, the weak motivations focusing new information to change voting patterns given the large margins of victory in most constituencies.

7   Conclusion

Many argue that greater transparency improves government performance and increases political accountability. If voters are not able to observe most of the actions of politicians, or to know with any certainty their underlying preferences, this provides room for politicians to act opportunistically and ignore the needs or preferences of their constituencies. Transparency, it is believed, solves the problem by putting citizens in a better position to police their politicians. This has been the rationale for major investments in information access and and citizen monitoring initiatives across the developing world. The theoretical literature on transparency points to a more nuanced picture, however: transparency can have positive or negative effects depending on what kind of information is revealed and what other sources of uncertainty affect strategic decision-making.

This paper provides results from a combination of survey and field experiments used to estimate the impact of greater transparency on the attitudes of voters, the performance of Members of Parliament in Uganda, and ultimately electoral outcomes. Together with partners in Uganda, we developed an innovative accountability tool—Uganda's Parliamentary Scorecard—and randomized the intensity of its dissemination across geographic constituencies

(and across voters within constituencies) to explore its impact. This approach allows us to avoid many of the identification issues that plague previous studies on access to information and government performance. Beyond estimating the average impact of the transparency mechanism on MP and voter behavior, our approach also provides a vehicle for uncovering the mechanisms through which information affects behavior. Perhaps most importantly, this study provides a test of transparency's impact in a real-world environment: in contrast to existing studies in which information is provided immediately in advance of elections with no time for politicians to respond, this field experiment more closely approximates the intensely competitive dynamic in which voters, incumbent MPs, and their opponents respond to the introduction of new information.

The evidence reported here paints a disappointing picture of the impact of the parliamentary scorecard. The results suggest that the prospect of having to defend their record in front of constituents had little or no impact on the behavior of MPs. The evidence also indicates that MPs may have been right not to worry: while voters were responsive to new information in the survey experiment, in general, constituents were poorly informed about the scorecard and dissemination workshops had little effect on voting behavior. While the workshops led to some greater awareness of the scorecard, it appears to have resulted in *less* accurate beliefs among voters in treated constituencies about the scores of incumbent MPs. In principle, it is possible that the scorecard had an equally strong positive effect on MPs that were and were not selected for dissemination workshops. However, the generally low levels of awareness of the scorecard among voters suggests that it is unlikely that there were uniformly strong effects in treated and non-treated constituencies. Moreover, while media attention drove improvements in aggregate MP performance in early periods, the effects attributable to the card appear to be very short term. Finally on most measures electoral outcomes are not positively related to scores for any MPs.

One preliminary conclusion from this experience is that the popular hypothesis that transparency alone leads to improvements in performance is overly optimistic. In this case, valuable information was made available to voters, but it did not take wings. It may be that transparency will be more effective when delivered through stronger dissemination campaigns or in settings with more robust, and competitive accountability processes. Or it may simply be that the success of politicians depends on factors only weakly related to their performance, such as personalistic ties to their constituents and the political and financial resources at their disposal. Either way, the evidence from this intervention reveals the limits of transparency as a tool for democratic accountability: in a political process with real outcomes at stake, MPs and their local intermediaries often contested the validity of the information contained in the parliamentary scorecard, muting or even undermining the impact of new information on voter attitudes and preferences. While voters may be willing to update their views when information is provided in a vacuum or with insufficient time for incumbents to respond, this experiment reveals that information revealed in a scaled-up intervention, as part of an ongoing political process, may simply become a part of the political debate and one possibly manipulable factor in the complex calculation of voters.

8 Online Appendix: Model Results and Additional Hypotheses

8.1 Equilibrium

Let $\sigma_{\tilde{s}}$ denote the probability with which the incumbent is returned given signal $\tilde{s}$, and we let $\beta_{\eta\theta}$ denote the probability with which incumbent θ plays $s = 1$ upon observing η. In the second period incumbents play their preferred strategies, as such we focus on strategy choices in the first period only.

We now prove the following proposition which identifies the set of equilibria that can be sustained in each environment.

Proposition 1 The complete set of equilibria are as follows:

[Environment A] If $\tau < -\theta_L$ and $\tau < \theta_H$ then:

- A: There is a unique equilibrium with $\beta_{0L} = \beta_{1H} = 1$, $\beta_{0H} = \beta_{1L} = 0, \sigma_1 = 1, \sigma_0 = 0$.

[Environment B] If $\tau > -\theta_L$ and $\tau < \theta_H$ then:

- B: There are no pure strategy equilibria. In the unique family of mixed strategy equilibria: $\beta_{0H} = 0$, $\beta_{1H} = \beta_{0L} = 1$ and $\beta_{1L} = 2 - \frac{1}{\varphi}$. Voter strategies σ_1, σ_0 are responsive and satisfy $\sigma_1 - \sigma_0 = -\frac{\theta_L}{\tau} \in (0, 1)$.

[Environment C] If $\tau < -\theta_L$ and $\tau > \theta_H$ then:

- C(i) There is a positively responsive pure strategy equilibrium: $\beta_{0L} = 1, \beta_{1L} = 0$, $\beta_{0H} = 1$, $\beta_{1H} = 1, \sigma_1 = 1$, $\sigma_0 = 0$

- C(ii) There is a negatively responsive pure strategy equilibrium: $\beta_{0L} = 1, \beta_{1L} = 0, \beta_{0H} = 0, \beta_{1H} = 0$, $\sigma_1 = 0$, $\sigma_0 = 1$

- C(iii) There is a negatively responsive mixed strategy equilibrium: $\beta_{0L} = 1, \beta_{1L} = 0, \beta_{0H} = 0, \beta_{1H} = \frac{1-\varphi}{\varphi}$. Voter strategies σ_1, σ_0 satisfy $\sigma_0 - \sigma_1 = \frac{\theta_H}{\tau}$.

[Environment D] If $\tau > -\theta_L$ and $\tau > \theta_H$ then:

- D(i) There is a class of positively responsive pooling equilibria with $\beta_{0L} = \beta_{1H} = \beta_{1L} = \beta_{0H} = 1$. Voter strategies σ_1, σ_0 satisfy $\sigma_1 - \sigma_0 > \max(-\frac{\theta_L}{\tau}, \frac{\theta_H}{\tau})$. This class of equilibria includes the pure strategy equilibrium with $\sigma_1 = 1$ and $\sigma_0 = 0$.

- D(ii) There is a class of negatively responsive pooling equilibria with $\beta_{0L} = \beta_{1H} = \beta_{1L} = \beta_{0H} = 0$. Voter strategies σ_1, σ_0 satisfy $\sigma_0 - \sigma_1 \geq \max(\frac{-\theta_L}{\tau}, \frac{\theta_H}{\tau}) \in (0, 1)$. This class of equilibria includes the pure strategy equilibrium with $\sigma_1 = 0$ and $\sigma_0 = 1$.

- D(iii) If $\theta_H \geq -\theta_L$ there is a class of positively responsive mixed strategy equilibria with $\beta_{0L} = \beta_{1H} = 1$, $\beta_{0H} = 0$, $\beta_{1L} = 2 - \frac{1}{\varphi}$. Voter strategies σ_1, σ_0 satisfy $\sigma_1 - \sigma_0 = \frac{-\theta_L}{\tau} \in (0, 1)$.

- $D(iv)$ If $\theta_H \geq -\theta_L$ then there is a class of negatively responsive mixed strategy equilibria with: $\beta_{0L} = 1$, $\beta_{1H} = \frac{1}{\varphi} - 1$, $\beta_{1L} = \beta_{0H} = 0$ and with σ_1 and σ_1 such that $[\sigma_0 - \sigma_1] = \frac{\theta_H}{\tau} \in (0, 1)$.

the **Proof** To establish the proposition we first derive a set of relations that hold across environments.

the

Incumbent decision rules   If $\eta = 1$, the incumbent will (weakly) prefer $s = 1$ if and only if:

$$\theta + (1 - \varepsilon)\sigma_1 + \varepsilon\sigma_0 \geq \varepsilon\sigma_1 + (1 - \varepsilon)\sigma_0 \tag{1}$$

Therefore, $\beta_{1\theta} > 0$ only if:

$$\theta \geq (1 - 2\varepsilon)[\sigma_0 - \sigma_1] = \tau[\sigma_0 - \sigma_1] \tag{2}$$

Similarly, $\beta_{1\theta} < 1$ only if:

$$\theta \leq \tau[\sigma_0 - \sigma_1] \tag{3}$$

If $\eta = 0$, the incumbent will (weakly) prefer $s = 0$ if and only if:

$$\theta + (1 - \varepsilon)\sigma_0 + \varepsilon\sigma_1 \geq \varepsilon\sigma_0 + (1 - \varepsilon)\sigma_1 \tag{4}$$

Therefore, $\beta_{0\theta} < 1$ only if:

$$\theta \geq -(1 - 2\varepsilon)[\sigma_0 - \sigma_1] = -\tau[\sigma_0 - \sigma_1] \tag{5}$$

Similarly, $\beta_{0\theta} > 0$ only if:

$$\theta \leq -\tau[\sigma_0 - \sigma_1] \tag{6}$$

These features yield the following relations between voter and incumbent strategies:

$$
\begin{aligned}
\theta &> -\tau[\sigma_0 - \sigma_1] \rightarrow \beta_{0\theta} = 0 \\
\theta &< -\tau[\sigma_0 - \sigma_1] \rightarrow \beta_{0\theta} = 1 \\
\theta &< \tau[\sigma_0 - \sigma_1] \rightarrow \beta_{1\theta} = 0 \\
\theta &> \tau[\sigma_0 - \sigma_1] \rightarrow \beta_{1\theta} = 1
\end{aligned}
\tag{7}
$$

The incumbent will be indifferent when $\eta = 1$ if and only if:

$$\theta = \tau[\sigma_0 - \sigma_1]. \tag{8}$$

The incumbent will be indifferent when $\eta = 0$ if and only if:

$$\theta = -\tau[\sigma_0 - \sigma_1] \tag{9}$$

From (8) we have that only one incumbent type can be indifferent if $\eta = 1$, furthermore, a high type can be indifferent only if $\sigma_0 > \sigma_1$ and a low type can be indifferent only if $\sigma_0 < \sigma_1$. From (9) we have that only one type of incumbent can be indifferent if $\eta = 0$, furthermore, a high type can be indifferent only if $\sigma_0 < \sigma_1$ and a low type can be indifferent only if $\sigma_0 > \sigma_1$. Ignoring the possibility that $\theta_H = -\theta_L$ we have that for any pair σ_0, σ_1 only one type can be indifferent and then only in one state. the

Voter Action   The voters' decision depends strongly on their posteriors. The voters have a unique best response to return an incumbent if $\tilde{q}(H|\tilde{s} = 1) > q$, and to remove her if $\tilde{q}(H|\tilde{s} = 1) < q$. Mixing is only possible if $\tilde{q}(H|\tilde{s} = 1) = q$. Given strategies $\{\beta_{\eta\theta}\}$, the posterior is given by:

$$\tilde{q}(H|\tilde{s} = 1) = \frac{\Pr(\tilde{s} = 1|\theta = \theta_H, \{\beta_{\eta\theta}\})q}{\Pr(\tilde{s} = 1|\theta = \theta_H, \{\beta_{\eta\theta}\})q + \Pr(\tilde{s} = 1|\theta = \theta_L, \{\beta_{\eta\theta}\})(1 - q)}$$

Where:

$$\begin{aligned}
\Pr(\tilde{s} &= 1|\theta = \theta_H, \{\beta_{\eta\theta}\}) = \varphi\left[\beta_{1H}(1 - \varepsilon) + (1 - \beta_{1H})\varepsilon\right] \\
&+ (1 - \varphi)\left[\beta_{0H}(1 - \varepsilon) + (1 - \beta_{0H})\varepsilon\right] \\
\Pr(\tilde{s} &= 1|\theta = \theta_L, \{\beta_{\eta\theta}\}) = \varphi\left[\beta_{1L}(1 - \varepsilon) + (1 - \beta_{1L})\varepsilon\right] \\
&+ (1 - \varphi)\left[\beta_{0L}(1 - \varepsilon) + (1 - \beta_{0L})\varepsilon\right]
\end{aligned}$$

Manipulation of this condition reveals that:

$$\tag{10}$$

$$\begin{aligned}
\tilde{q}(H|\tilde{s} &= 1) \geq q \leftrightarrow \tilde{q}(H|\tilde{s} = 0) \leq q \leftrightarrow \varphi\left(\beta_{1H} - \beta_{1L}\right) \geq (1 - \varphi)\left(\beta_{0L} - \beta_{0H}\right) \\
\tilde{q}(H|\tilde{s} &= 1) \leq q \leftrightarrow \tilde{q}(H|\tilde{s} = 0) \geq q \leftrightarrow \varphi\left(\beta_{1H} - \beta_{1L}\right) \leq (1 - \varphi)\left(\beta_{0L} - \beta_{0H}\right)
\end{aligned}$$

Given these general features we establish the proposition by considering an exhaustive set of cases.

We begin by ruling out equilibria with $\sigma_1 = \sigma_0$, we then identify all "positively responsive" equilibria and finally all "negatively responsive equilibria."

Claim There are no non-responsive equilibria.

Assume contrary to the claim that $\sigma_1 = \sigma_0$ in equilibrium.

Recall that $\beta_{1\theta} = 0$ if $\theta < \tau[\sigma_0 - \sigma_1] = 0$ and $\beta_{1\theta} = 1$ if $\theta > \tau[\sigma_0 - \sigma_1] = 0$. We then have: $\beta_{1L} = 0$, $\beta_{1H} = 1$. Since $\beta_{0\theta} = 0$ if $\theta > -\tau[\sigma_0 - \sigma_1] = 0$ and $\beta_{0\theta} = 1$ if $\theta < -\tau[\sigma_0 - \sigma_1] = 0$, and therefore $\beta_{0L} = 1$, $\beta_{0H} = 0$.

Given these strategies we have:

$$\tilde{q}(H|\tilde{s} = 1) > q \leftrightarrow \varphi\left(\beta_{1H} - \beta_{1L}\right) > (1 - \varphi)\left(\beta_{0L} - \beta_{0H}\right) \leftrightarrow \varphi > \frac{1}{2}$$

However $\varphi > \frac{1}{2}$ by assumption and so $\tilde{q}(H|\tilde{s} = 1) > q$ which implies $\sigma_1 = 1$ in equilibrium. Similarly $\tilde{q}(H|\tilde{s} = 0) < q$ which requires $\sigma_1 = 0$.

Claim Environment A: There is a unique equilibrium

In environment A, from (7) we have $\theta_L < -\tau$ implies $\beta_{0L} = 1$ and $\beta_{1L} = 0$ and $\theta_H > \tau$ implies $\beta_{0H} = 0$ and $\beta_{1H} = 1$.

The unique equilibrium involves pure strategies in which H plays good policies and L chooses bad policies. Voters infer that an incumbent is of a high type if and only if they observe $\tilde{s} = 1$.

Claim Environment B: There are no Pure Strategy Equilibria. There is a single class of Mixed Strategy Equilibria.

Consider first a positively responsive pure strategy with $[\sigma_0 - \sigma_1] = -1$. Then, from (7): $\beta_{1\theta} = 0$ if $\theta < -\tau$, $\beta_{1\theta} = 1$ if $\theta > -\tau$, $\beta_{0\theta} = 0$ if $\theta > \tau$ and $\beta_{0\theta} = 1$ if $\theta < \tau$. Any such equilibrium must involve $\beta_{0H} = 0$ and $\beta_{1H} = \beta_{1L} = \beta_{0L} = 1$. In this case $\tilde{q}(H|\tilde{s} = 1) < q \leftrightarrow \varphi(\beta_{1H} - \beta_{1L}) < (1 - \varphi)(\beta_{0L} - \beta_{0H}) \leftrightarrow 0 < (1 - \varphi)$. Hence if the voter observes a $\tilde{s} = 1$ she will infer that the incumbent is more likely to be of type L and remove her, contrary to the assumption.

Consider next a negatively responsive pure strategy with $[\sigma_0 - \sigma_1] = 1$. Then: $\beta_{1\theta} = 0$ if $\theta < \tau$, $\beta_{1\theta} = 1$ if $\theta > \tau$, $\beta_{0\theta} = 0$ if $\theta > -\tau$ and $\beta_{0\theta} = 1$ if $\theta < -\tau$ and so in equilibrium we require: $\beta_{1H} = 1, \beta_{0H} = \beta_{1L} = \beta_{0L} = 0$.

In this case $\tilde{q}(H|\tilde{s} = 1) > q \leftrightarrow \varphi(\beta_{1H} - \beta_{1L}) > (1 - \varphi)(\beta_{0L} - \beta_{0H}) \leftrightarrow \varphi > 0$ and so if the voter observes a $\tilde{s} = 1$ she will infer that the incumbent is more likely to be of type H and retain him, contrary to the assumption.

Hence the only equilibria in Environment B are mixed strategy equilibria.

In a mixed strategy equilibrium the requirement for the incumbent to mix is: $\theta = \tau[\sigma_0 - \sigma_1]$ if $\eta = 1$ and $\theta = -\tau[\sigma_0 - \sigma_1]$ if $\eta = 0$.

Condition $\theta_H > \tau$ together with the fact that $\sigma_0 - \sigma_1 \leq 1$ implies that H will never mix and in particular $\beta_{0H} = 0$ and $\beta_{1H} = 1$. Hence any mixing must be by L only. When $\eta = 1$, we need $[\sigma_1 - \sigma_0] = -\frac{\theta_L}{\tau}$ where $0 \leq -\frac{\theta_L}{\tau} \leq 1$. When $\eta = 0$, we need $[\sigma_0 - \sigma_1] = -\frac{\theta_L}{\tau}$, where again $0 \leq -\frac{\theta_L}{\tau} \leq 1$. Thus a σ_0, σ_1 combination can be chosen in which L will mix under one but only one state of the world.

We examine each case. Assume first that $\beta_{0L} = 1$. Then:

$$\tilde{q}(H|\tilde{s} = 1) = q \leftrightarrow \varphi(\beta_{1H} - \beta_{1L}) = (1 - \varphi)(\beta_{0L} - \beta_{0H}) \leftrightarrow \beta_{1L} = 2 - \frac{1}{\varphi}$$

If however $\tilde{s} = 0$ then:

$$\tilde{q}(H|\tilde{s} = 0) = q \leftrightarrow \beta_{1L} = 2 - \frac{1}{\varphi}$$

Hence with $\beta_{1L} = 1$, mixing can be sustained either when $\tilde{s} = 0$ or $\tilde{s} = 1$ or both. Assume next that $\beta_{1L} = 0$. Then:

$$\tilde{q}(H|\tilde{s} = 1) = q \leftrightarrow \varphi(\beta_{1H} - \beta_{1L}) = (1 - \varphi)(\beta_{0L} - \beta_{0H}) \leftrightarrow \beta_{0L} = \frac{\varphi}{1 - \varphi} > 1$$

Similarly:

$$\tilde{q}(H|\tilde{s}=0) = q \leftrightarrow \beta_{0L} = \frac{\varphi}{1-\varphi} > 1$$

And no mixing cannot be sustained. Thus the unique family of mixed strategy equilibria involve strategies: $\beta_{0H} = 0$, $\beta_{1H} = \beta_{0L} = 1$ and $\beta_{1L} = 2 - \frac{1}{\varphi}$. The voters have a set of feasible strategies over σ_1, σ_0 such that $[\sigma_1 - \sigma_0] = -\frac{\theta_L}{\tau}$ and hence $\sigma_1 > \sigma_0$.

Claim Environment C: Positively Responsive Equilibria Imply Pure Strategies.

Assume that in equilibrium: $\sigma_1 > \sigma_0$. Then from (7) we have: $\beta_{0L} = 1$ and $\beta_{1H} = 1$.

From $\theta_L < -\tau$ we have $\theta_L < -\tau[\sigma_1 - \sigma_0] < \tau[\sigma_1 - \sigma_0]$ and so $\beta_{1L} = 0$. Adding these elements together we have:

$$\tilde{q}(H|\tilde{s}=1) > q \leftrightarrow \varphi > (1-\varphi)(1-\beta_{0H})$$

Thus for all values of β_{0H} we have $\tilde{q}(H|\tilde{s}=1) > q$ and hence there is no mixed strategy equilibrium, and in particular, $\sigma_1 = 1$ and $\sigma_0 = 0$. Using this fact we have that in the unique responsive equilibrium in environment C, $\theta_H < \tau$ implies $\beta_{0H} = 1$.

Claim Environment D: Positively Responsive Equilibria are all of Type $D(i)$ or $D(iii)$

If $\sigma_1 > \sigma_0$ then, from (7) we have : $\beta_{0L} = 1$ and $\beta_{1H} = 1$. In this case:

$$\tilde{q}(H|\tilde{s}=1) \geq q \leftrightarrow \varphi(1-\beta_{1L}) \geq (1-\varphi)(1-\beta_{0H})$$

For a responsive pure strategy equilibrium we have $\sigma_1 = 1$ and $\sigma_0 = 0$ and so, $\beta_{0H} = 1$ and $\beta_{1L} = 1$.

For mixing to be possible in a positively responsive equilibrium we require $\varphi(1-\beta_{1L}) = (1-\varphi)(1-\beta_{0H})$ and either (i) $\beta_{1L} = \beta_{0H} = 1$ or (ii) $(1-\beta_{1L}) < (1-\beta_{0H})$ and so $\beta_{0H} < \beta_{1L}$.

For (i) we need (for $\beta_{1L} = 1$) that $\theta_L > \tau[\sigma_0 - \sigma_1]$ and (for $\beta_{0H} = 1$) that $\theta_H < -\tau[\sigma_0 - \sigma_1]$. For this we need: $\sigma_1 - \sigma_0 > \max(-\frac{\theta_L}{\tau}, \frac{\theta_H}{\tau})$. This class of equilibria $(D(i))$ includes the pure strategy equilibrium with $\sigma_1 = 1$ and $\sigma_0 = 0$.

For case (ii) $\beta_{0H} < \beta_{1L}$ implies that $\beta_{0H} < 1$ and $\beta_{1L} > 0$. We have established that it is not possible for both types to mix in any equilibrium, furthermore we can rule out the possibility that H mixes since in that case $\beta_{1L} = 1$, but then the condition $(1-\beta_{1L}) < (1-\beta_{0H})$ cannot be satisfied. The only mixing then involves L mixing, and so $\beta_{0H} = 0$ and $\beta_{1L} = 2 - \frac{1}{\varphi}$. To support this equilibrium we require that $\theta_L = \tau[\sigma_0 - \sigma_1]$ and so $[\sigma_1 - \sigma_0] = \frac{-\theta_L}{\tau}$. In addition to support $\beta_{0H} = 0$ we need, from 5, that $\theta_H \geq -\tau[\sigma_0 - \sigma_1] = -\theta_L$. This is case $D(iii)$.

Claim The only negatively responsive equilibrium are those given by $C(ii)$, $C(iii)$, $D(ii)$ and $D(iv)$.

Assume that in equilibrium: $\sigma_1 < \sigma_0$.

If $\eta = 1$, the incumbent will prefer to play $s = 1$ if and only if: $\theta \geq \tau[\sigma_0 - \sigma_1]$. With $\sigma_1 < \sigma_0$, the low type will always play $s = 0$ if $\eta = 1$, that is: $\beta_{1L} = 0$.

If $\eta = 0$, the incumbent will prefer to play $s = 0$ if and only if: $\theta \geq -\tau[\sigma_0 - \sigma_1] > 0$. With $\sigma_1 < \sigma_0$, the high type will always play $s = 0$ if $\eta = 0$. That is: $\beta_{0H} = 0$.

To sustain $\sigma_1 < \sigma_0 \leq 1$ we require $\tilde{q}(H|\tilde{s}=1) \leq q$, or equivalently:

$$\tilde{q}(H|\tilde{s} = 1) \leq q \leftrightarrow \varphi\left(\beta_{1H} - \beta_{1L}\right) \leq (1-\varphi)\left(\beta_{0L} - \beta_{0H}\right)$$
$$\leftrightarrow \quad \varphi\beta_{1H} \leq (1-\varphi)\beta_{0L}$$

Thus (since $\varphi > .5$,) we require that either (i) $\beta_{1H} = \beta_{0L} = 0$ or (ii) $\beta_{1H} < \beta_{0L}$ and in particular that $\beta_{0L} > 0$ and $\beta_{1H} < 1$.

In case (i) $\beta_{1H} = \beta_{0L} = 0$ requires that (a) $\theta_H \leq \tau[\sigma_0 - \sigma_1]$ and (b) $\theta_L \geq -\tau[\sigma_0 - \sigma_1]$. This can only be sustained in environment D. To see this note that condition (a) can never be satisfied if $\theta_H > \tau$ and this allows us to rule out negatively responsive equilibria in environments A and B. Condition (b) can never be satisfied if $\theta_L < -\tau$ or $-\theta_L > \tau$ and this allows us to rule out environment C. In environment D however pooling of this form is possible if $\sigma_0 - \sigma_1 \geq \max(\frac{-\theta_L}{\tau}, \frac{\theta_H}{\tau})$. This corresponds to case $D(ii)$.

The conditions in case (ii) themselves imply that: $\theta_H \leq \tau[\sigma_0 - \sigma_1]$ and $\theta_L \leq -\tau[\sigma_0 - \sigma_1]$ or $-\theta_L \geq \tau[\sigma_0 - \sigma_1]$. The condition $\theta_H \leq \tau[\sigma_0 - \sigma_1]$ can never be satisfied if $\theta_H > \tau$ and this allows us to rule out negatively responsive equilibria in environments A and B. Together these imply that $\theta_H \leq -\theta_L$ which holds in case C.

A negatively responsive pure strategy equilibrium in case (ii) thus requires $\beta_{0L} = 1$ and $\beta_{1H} = 0$. No such equilibrium holds in environment D since for $\beta_{0L} = 1$ we require $\theta_L \leq -\tau[\sigma_0 - \sigma_1] = -\tau$ which holds only in environments A and C. We have already rules out such an equilibrium in environment A; such an equilibrium does obtain in environment C however and corresponds with equilibrium $C(ii)$.

A negatively responsive mixed strategy equilibrium in environment C can only be sustained if $\varphi\beta_{1H} = (1-\varphi)\beta_{0L}$. Since mixing can only take place with respect to one strategy we need $\beta_{0L} = 1$ and $\beta_{1H} = \frac{1-\varphi}{\varphi} \in (0,1)$ (note $\beta_{1H} = 1$ implies $\beta_{0L} = \frac{\varphi}{1-\varphi} > 1$) and $\sigma_0 - \sigma_1 = \frac{\theta_H}{\tau}$. This corresponds to equilibrium $C(iii)$. Note that to sustain $\beta_{0L} = 1$ we need $\theta_L < -\tau[\sigma_0 - \sigma_1] = -\theta_H$ which is true in environment C.

A negatively responsive equilibrium in environment D can only be sustained if $\tau > -\theta_L \geq \tau[\sigma_0 - \sigma_1]$, and hence if $[\sigma_0 - \sigma_1] < 1$. Equivalently, to sustain a negatively responsive equilibrium in environment D, some voter type must mix. However mixing requires that in equilibrium $\tilde{q}(H|\tilde{s} = 1) = q$, and so $\frac{\varphi}{1-\varphi}\beta_{1H} = \beta_{0L}$. Since $\beta_{1H} < \beta_{0L}$ this condition cannot be met be $\beta_{1H} = \beta_{0L} = 0$, instead mixing by one or other incumbent type is required. In addition the condition cannot be met if $\beta_{1H} = 0$ or $\beta_{0L} = 0$. Therefore we have $\beta_{1H} > 0$ and $\beta_{0L} > 0$. Generically we have established that only one type will mix for a given voter strategy. Since $\frac{\varphi}{1-\varphi} > 1$, the only feasible mixed strategy equilibrium requires $\beta_{1H} = \frac{1-\varphi}{\varphi}, \beta_{0L} = 1$. H will be *willing* to mix iff $\theta_H = \tau[\sigma_0 - \sigma_1]$, that is: $[\sigma_0 - \sigma_1] = \frac{\theta_H}{\tau}$. And, from 5, L will be willing to play $\beta_{0L} = 1$ only if $\theta_L \geq -\tau[\sigma_0 - \sigma_1] = -\theta_H$. This corresponds to case $D(iv)$.

8.2 Implications

8.2.1 Welfare Implications

Consider now the question of voter welfare. Total expected voter utility in environment A is given as follows:

$$W(A) = q[1 + \varphi[(1 - \varepsilon) + \varepsilon q] + (1 - \varphi)[\varepsilon + (1 - \varepsilon)q]]$$
$$+ (1 - q)[\varphi(1 - \varepsilon) + (1 - \varphi)\varepsilon]q$$
$$= q[1 + q] + 2q(1 - q)[\varphi + (1 - 2\varphi)\varepsilon]$$

We can see from this equation that welfare is increasing in transparency within equilibria of type A; in addition, the gains from transparency are greatest when prior uncertainty about the incumbent types is high ($q = .5$) and uncertainty about the correct type of policy is low ($\varphi = 1$). In environment B we have:

$$W(B|q, \varphi, \varepsilon) = (2\varphi - 1) + q(3 - 2\varphi) - (1 - \varphi)^2(1 - q)q\varepsilon$$

Within environment B, the gains from transparency are greatest when prior uncertainty about the incumbent types is high ($q = .5$) and uncertainty about the correct type of policy is high ($\varphi = .5$); but even in these cases the marginal effect is much weaker than in environment A.

Welfare in environments C and D are more straightforward:

$$W(C|q, \varphi, \varepsilon) = q[1 + (2 - q)\varphi] - 2\varphi q(1 - q)\varepsilon$$
$$W(D|q, \varphi, \varepsilon) = \varphi + q$$

In all four environments it is easy to check that $\frac{\partial W}{\partial \varepsilon} \leq 0$, with the inequality strict for all but case D. This implies that, *locally,* transparency produces gains in welfare; these *local* gains are due entirely to a better ability to select MPs. However the effects of accountability mechanism are more complicated: a rise in transparency can be associated with a fall in voter welfare if the equilibrium shifts from one environment to another. Indeed this is the key result of the analysis: *globally, a rise in transparency can have positive, negative or non-monotonic effects depending on the underlying parameter values.*

Figure 11 shows how welfare depends on transparency for a range of parameter values. The three left graphs consider cases in which environments A, B and D obtain. Specifically we impose $\theta_H = \frac{2}{3}$, $\theta_L = -\frac{1}{3}$. The right three graphs show equilibria in environments A, C and D for a case with $\theta_H = \frac{1}{3}$ and $\theta_L = -\frac{2}{3}$. Each graph considers a different value for φ, as marked on the titles, and within each graph the four lines correspond (in order from bottom to top) to $q = 0$, $q =, 5$, $q = .75$ and $q = 1$.

The lower figures correspond to cases in which $\varphi = 1$ (in which there is no difficulty in associating good actions with good outcomes). In these cases the more transparency the better. Within environment A, more transparency leads to better selection of second stage politicians, and thus a rise in welfare. The major gains arise however from shifts from environments A to B and from C to D. These step shifts are pure accountability shifts; they correspond exactly to the gains from inducing bad types to take action $s = 1$.

The central panels ($\varphi = .75$) in which there is a positive but imperfect relation between actions and outcomes, tell a more complex story. In some cases, a rise in transparency leads to a rise in welfare throughout its range. This is true for example if almost all types are
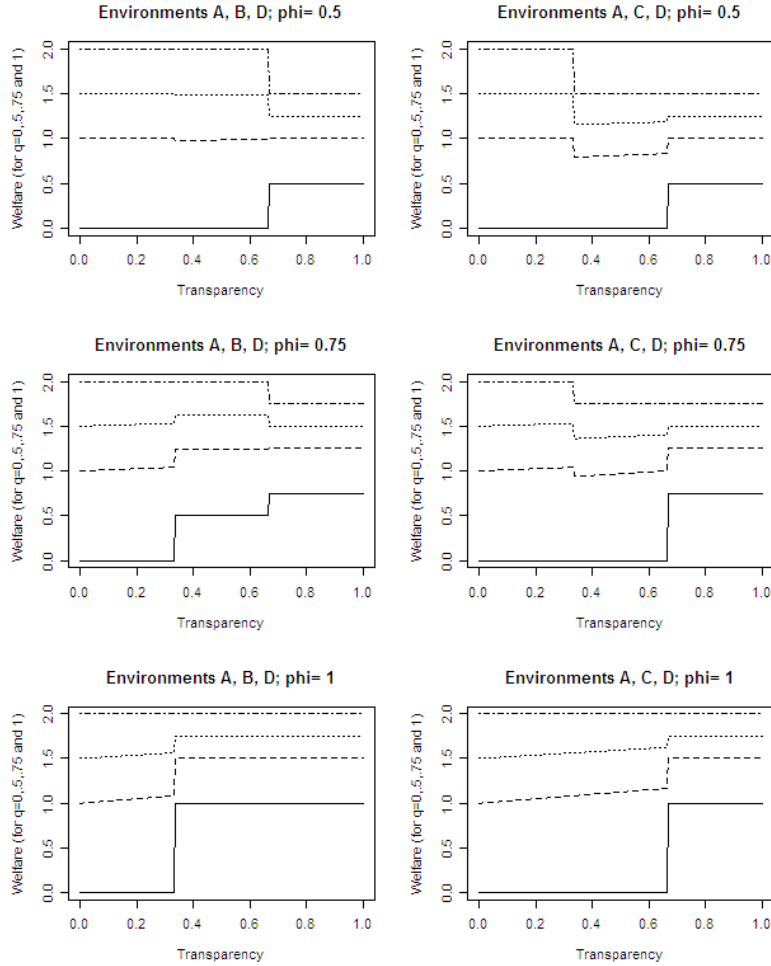
Figure 11: Citizen welfare as a function of τ for a series of parameter values. In each graph higher lines correspond to higher values of q.

Low, $q \approx 0$. However in other cases, notably when $q \approx 1$ transparency has the opposite, adverse effect. In these cases, the (many) good types who would select policies they know to be good under equilibria A or B choose instead to conform, knowing that whenever $\eta = 0$, their good actions run a risk of being misinterpreted by voters. As a consequence, they conform to expectations instead of seeking to achieve public benefits. In intermediate cases, non-monotonicities can arise, with a rise in transparency leading to either an intermediate rise or decline in welfare. *Which type of non-monotonicity arises depends on the relative gains from incentivizing bad types to act well when $\eta = 1$ and the losses associated with good types acting badly when $\eta = 0$.*

Finally, we note that even when $\varphi \approx 0.5$ and there is no (ex ante) relationship between s and benefits to voters, the first column in Figure 1 tells us that information about s nevertheless can help keep politicians accountable. In the extreme case of *only bad politicians*, a

rise in transparency allows voters to ensure that politicians choose the right action half the time (although voters never know which half); the same adverse effects seen in the $\varphi = .75$ cases do however obtain here also.

From these observations we derive the following hypothesis:

$H_{Welfare}$ (Welfare Gains) A rise in transparency is associated with gains in voter welfare in cases in which MPs are not believed to have voter interests at heart and in which voters are more confident of the mapping between actions and outcomes, but is associated with a fall in welfare when MPs are believed to have voter interests at heart or in which voters are less confident of the mapping between actions and outcomes.

In the case in which only the selection mechanism is in operation, there are unambiguous gains in the second period and no effects on welfare in the first period. In the case in which only the accountability mechanism is in operation, there are ambiguous effects in the first period and no effects on welfare in the second period.

8.2.2 Reelection Probabilities

As shown in Figure 12, there is a non-monotonic relationship between transparency and turnover. In all cases if transparency is already sufficiently high as to ensure good performance through the accountability mechanism, a rise in transparency *reduces* turnover rates by ensuring that voters are less likely to make false judgments. However transparency can also increase turnover through a number of channels. In environment A, for example, if politicians are implementing their preferred strategies, unrestrained by voters, a rise in transparency can still facilitate selection by reducing the likelihood of removing High types and increasing the likelihood of removing Low types.

General hypotheses are hard to draw and again depend on beliefs about the incumbents types and confidence in policy mappings. We extract the following, however, for study:

$H_{Incumbency}$ (Incumbency Advantage) The incumbency advantage is increasing in transparency when there is greater uncertainty regarding the mapping from action to outcomes or when the prior pool of candidates is believed to have voter interests at heart. Turnover rates are increasing at intermediate levels of transparency, especially when there is prior distrust in politicians and when the mapping from inputs to outputs is believed to be known.

8.2.3 Interaction between selection and accountability mechanisms

Let $\bar{q}^X$ denote the probability with which a a replaced incumbent is in fact of high quality in environment X. Then the probability that the replacement is higher quality than the replaced incumbent is $q(1 - \bar{q}^X)$; selection then results in higher quality politicians when q^X is low.

It is easy to see however that $\bar{q}^D > \bar{q}^A$. Similarly $\bar{q}^D > \bar{q}^C$. But $\bar{q}^A > \bar{q}^C$. These results suggest that in some ranges the accountability mechanism inhibits the selection mechanism from operating, but in other ranges it enhances the selection mechanism. Increased transparency that results in greater conformism by high types (but not low types) improves selection (the shift from environment A to environment B). But improvements in transparency that result
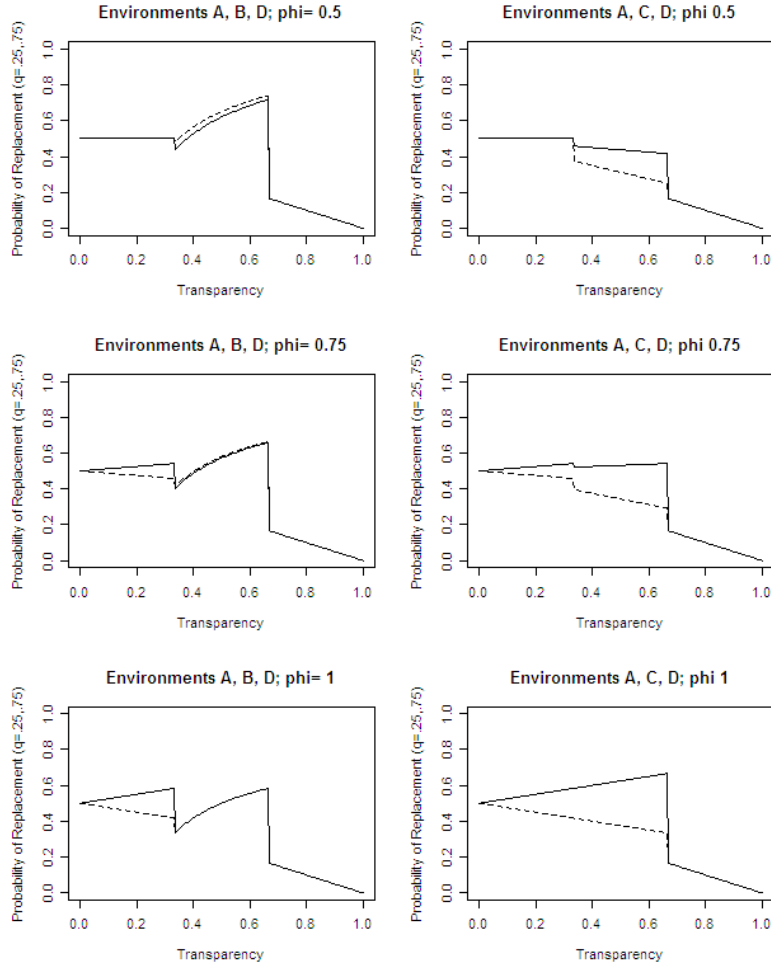
Figure 12: Probability with which the incumbent is replaced as a function of τ for a series of parameter values given $q = .25$ (solid line) and $q = .75$ (dotted line).

in greater conformism by low types weakens selection (the shift from environment C to environment D). The overall effect over the full range (A to D) is a worsening in selection. This contrasts sharply with what would arise in a situation in which incumbents are not responsive to electoral incentives. In these environments an increase in transparency unambiguously improves expected politician quality in all ranges.

$H_{Selection}$ (Quality of replacements) Greater transparency results in weakened expectations that replacement politicians are of higher quality than incumbents.

Note that if only the selection mechanism is in operation, then we expect the opposite relationship of that given in the hypothesis to hold.

More formally:

46

$$\overline{q}^A = \frac{\kappa q}{\kappa q + (1-\kappa)(1-q)}$$

$$\overline{q}^B = \frac{\left(\kappa + (1-\kappa)\frac{\tau+\theta_L}{\tau}\right)q}{\left(\kappa + (1-\kappa)\frac{\tau+\theta_L}{\tau}\right)q + (((2-\frac{1}{\varphi})((1-\epsilon)\frac{\tau+\theta_L}{\tau} + \epsilon) + (\frac{1}{\varphi}-1)(\kappa\frac{\tau+\theta_L}{\tau} + (1-\kappa)))(1-q)}$$

$$\overline{q}^C = \frac{\epsilon q}{\epsilon q + (1-\kappa)(1-q)}$$

$$\overline{q}^D = \frac{\epsilon q}{\epsilon q + \epsilon(1-q)} = q \tag{11}$$

where $\kappa \equiv \varphi\epsilon + (1-\varphi)(1-\epsilon)$ is the probability that voters will observe a signal of bad policies given a politician is implementing bad policies. It is also the probability that voters will observe a signal of good policies when bad policies are being played. Note that $1-\kappa = \varphi(1-\epsilon) + (1-\varphi)\epsilon = (1-\varphi)\epsilon + \varphi(1-\epsilon)$ which is the probability that someone playing bad policies will be seen as playing bad policies and that someone playing good policies will be seen as playing good policies.

It follows that $\overline{q}^D > \overline{q}^C$ and $\overline{q}^D > \overline{q}^A$ but $\overline{q}^A > \overline{q}^C$.

For: $\overline{q}^D > \overline{q}^C$ note:

$$\overline{q}^D > \overline{q}^C \leftrightarrow \epsilon < 1 - \kappa \leftrightarrow \epsilon < \varphi\epsilon + (1-\varphi)(1-\epsilon) \leftrightarrow \epsilon < .5$$

For $\overline{q}^C < \overline{q}^A$:

$$\overline{q}^C < \overline{q}^A \leftrightarrow \frac{\epsilon q}{\epsilon q + (1-\kappa)(1-q)} < \frac{\kappa q}{\kappa q + (1-\kappa)(1-q)}$$

$$\leftrightarrow$$

$$(\kappa q + (1-\kappa)(1-q))\epsilon q < (\epsilon q + (1-\kappa)(1-q))\kappa q \leftrightarrow \epsilon < \kappa \leftrightarrow \epsilon < .5$$

For $\overline{q}^A < \overline{q}^D$:

$$\overline{q}^A < \overline{q}^D \leftrightarrow \frac{\kappa q}{\kappa q + (1-\kappa)(1-q)} < q \leftrightarrow \kappa < .5$$

which always holds under our assumptions of $\varphi > .5$ and $\epsilon < .5$.

8.2.4 Candidate Pool

Finally we can consider the incentives for individuals to stand as MPs for any given level of transparency. We suppose again that $|\theta_i| < 1$ and hence that the maximum utility obtainable from office is less than 2. Finally we assume that there are an equal number of good and bad potential candidate types and that each individual has an outside option distributed $u \sim U[0,2]$. We expect that candidates will stand for office only if their expected gains, $y > u$.

Our interest is in determining whether the composition of the candidate pool is likely to improve or worsen with transparency.

The expected benefit to a candidate of type H in equilibrium A is:

$$u_{HA} = \theta_H + \varphi(1 - \varepsilon) + (1 - \varphi)\varepsilon = \theta_H + \varphi + (1 - 2\varphi)\varepsilon$$

To place the utilities of the High and Low types on a comparable scale (relative to u) we add an extra term $-\theta_L$ to the Low types utility. The expected benefit to a candidate of type L in an equilibrium in environment A is then:

$$u_{LA} = -\theta_L + \varphi\varepsilon + (1 - \varphi)(1 - \varepsilon) = -\theta_L - (1 - 2\varphi)\varepsilon + (1 - \varphi)$$

The share of candidates that are high types from the pool of candidates willing to stand for office at the beginning of the first period is then simply:

$$q_A = \frac{u_{HA}\frac{1}{2}}{u_{HA}\frac{1}{2} + u_{LA}\frac{1}{2}} = \frac{\theta_H + \varphi + (1 - 2\varphi)\varepsilon}{\theta_H - \theta_L + 1}$$

which is decreasing in ε. Hence more transparency produces a better pool.

In a similar way we have:

$$q_B = \frac{\theta_H + (\varphi + (1 - 2\varphi)\varepsilon)\frac{-\theta_L}{\tau}}{\theta_H - \theta_L + \frac{-\theta_L}{\tau}}$$

$$q_C = \frac{\varphi\theta_H + (1 - \varepsilon)}{\varphi\theta_H - \theta_L + 1 + (1 - \varphi)(1 - 2\varepsilon)}$$

$$q_D = \frac{\varphi\theta_H + (1 - \varepsilon)}{\varphi\theta_H - (1 - \varphi)\theta_L + 2(1 - \varepsilon)}$$

From these values we can establish that q_A, q_B and q_C are decreasing in ε. However, q_D can be increasing or decreasing in ε depending on whether office is a more attractive prospect for high or low types. It is increasing in ε if and only if: $\frac{\theta_H}{-\theta_L} > \frac{1-\varphi}{\varphi}$ and decreasing if and only if $\frac{\theta_H}{-\theta_L} < \frac{1-\varphi}{\varphi}$. Hence q_D will be increasing in ε (that is, falling in transparency) whenever $\theta_H > -\theta_L$ and whenever the mapping from outcomes is well known (φ close to 1).

As before, a change in ε can also be associated with a change in the type of equilibrium, with more dramatic consequences for behavior. Note that if $\frac{-\theta_L}{\tau} = 1$, then: $q_B = q_A$; this establishes that the share of H types is increasing over the range between equilibria type A and equilibria type B. Similarly when $\frac{\theta_H}{\tau} = 1$, $q_C = q_A$ which establishes that the gain from transparency holds across these parameter ranges also. Hence the pool of candidates is improving in transparency in low and intermediate ranges.[13]

However, in ranges in which players are already pooling on conformist action, or in which a rise in transparency induces them to pool, rising transparency has adverse effects on the pool of applicants. The between-environment fall in the quality of the candidate pool for a

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[13]In addition, we have that provided $\frac{\theta_H - \theta_L\theta_H + \frac{1}{2}\theta_L}{\frac{1}{2}\theta_H - 2\theta_L\theta_H - \frac{1}{2}\theta_L} < \varphi$, the pool contains relatively more high types in the full transparency state ($\tau = 1$) than in the lowest transparency state ($\tau = 0$); this condition always holds with $\theta_H < -\theta_L$ (that is when the relevant environments are A, C, D) and can never hold if $\frac{\theta_H}{2\theta_H+2} > -\theta_L$. For $\frac{\theta_H}{2\theta_H+2} < -\theta_L < \theta_H$ improvements in the pool across the full range depend on the quality of the signal φ.

shift from state B to D arises from two effects: from the fact that High types now conform in order to ensure reelection, and from the fact that Low types, though willing to conform in equilibrium B, are more likely to be rewarded for conforming in equilibrium D. The intuition for the worsening pool of candidates *within* equilibrium D is the following. Each type's benefit comes from two elements — the Period 1 benefit, which is greater for the High type than for the Low type, and the period 2 benefit, which is equal across both types. As transparency rises, the expected gains to both types of Period 2 benefits rises and in doing so it reduces the relative aggregate gains of High types compared to Low types.

H_{Pool} (Candidate pool) A rise in transparency will be associated with an improvement in the quality of the pool of candidates (and, relative to the control areas, a larger positive difference between the performance of newly elected MPs after the 2011 elections and that of the candidates that they replaced), at low levels of transparency, with this effect weakening or reversing at high levels of transparency.

8.3   Extra Tables

	Elect	Elect	Elect	Ran	Ran	Ran	Share	Share	Share
Workshop (2sls)	-0.031	-0.084	0.071	-0.085	-0.054	-0.009	0.032	-0.078	-0.019
	(0.20)	(0.52)	(0.47)	(0.65)	(0.39)	(0.07)	(0.48)	(1.08)	(0.31)
Interaction (2sls)	0.000	0.001	-0.002	0.002	0.001	-0.000	-0.001	0.001	0.000
	(0.07)	(0.39)	(0.78)	(0.77)	(0.38)	(0.02)	(0.62)	(0.90)	(0.26)
Plenary pct	-0.000			0.000			-0.000		
	(0.08)			(0.27)			(0.61)		
Committee pct		-0.000			0.001			-0.001	
		(0.24)			(0.45)			(0.98)	
Constituency pct			0.004			0.002			0.001
			(3.07)***			(1.35)			(2.26)**
Constant	0.462	0.464	0.242	0.758	0.746	0.700	0.478	0.486	0.385
	(5.32)***	(4.78)***	(2.98)***	(10.42)***	(9.11)***	(10.13)***	(12.30)***	(10.80)***	(10.49)***
R^2	.	0.00	0.04	0.00	0.00	0.01	0.01	0.01	0.05
N	293	239	292	293	239	292	227	185	227

Table 8: Local Average Treatment Effects of Dissemination Workshops. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

	Action for Respondent	Action for Nation	Action for Constituency	Teacher Absenteeism	Relative Welfare	Employment
Workshop Effect	0.005	0.001	0.030	-0.043	-0.009	0.007
	(0.35)	(0.03)	(0.64)	(1.87)*	(0.44)	(0.14)
Control Average:	0.097	0.212	0.402	0.142	0.172	0.504
	(9.41)***	(7.69)***	(13.23)***	(7.29)***	(10.37)***	(13.33)***
N	2,148	1,674	1,975	1,150	2,150	1,503

Table 9: Adverse Effects at the District Level. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Standard errors clustered at the district level.

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