

Political Agency, Government Responsiveness and the Role of the Media

Timothy Besley and Robin Burgess*
Department of Economics and STICERD
London School of Economics
Houghton Street
London WC2A 2AE.

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Abstract

The role of mass media in making governments responsive to the needs of citizens is a relatively neglected area in economics. We sketch a theoretical example with a role for media in enhancing government responsiveness based on asymmetric information between citizens and government. We then use data for the period 1958-1992 on the extent to which Indian state governments responded to food shortages via the public distribution of food, correlating these with proxies of media, political and economic development. We find that states that are more responsive tend to also be those with high levels of newspaper circulation, electoral turnout and literacy. In contrast, richer states do not tend to be more responsive than poorer states.

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1 Introduction

Understanding the mechanisms by which citizens' needs are reflected in policy is a key issue in political economy. This is particularly pertinent for populations that live in poverty and depend on the government to protect them from shocks. Indeed, the need for responsive government is a key message of the World Bank's latest World Development Report (World Bank (2000)) on poverty reduction.

Outside of the world of perfectly benevolent governments a range of institutions – economic, social, political – affect the incentives of governments to respond to citizens' needs. Standard reasoning suggests that responsiveness will typically depend upon the size of the group that is affected – a large group, having greater political power, is more likely to get the government's attention. However, studying the political agency problem in more detail suggests other factors that are likely to be important for government activism. First, voters have to participate in the political process in order to be capable of punishing poorly performing incumbents. Second, voters have to have the information about performance to assess the quality of their incumbents' performance. Mass media can play a critical role here by informing voters about the actions of incumbents which they might otherwise be unaware of.

In this paper, we lay out an example of a political agency model with a role for media in enhancing government responsiveness. We then use data for the period 1958-1992 on the extent to which Indian state governments responded to food shortages via the public distribution of food and correlate these responsiveness measures with various state characteristics. We find that states with greater newspaper circulation, literacy and electoral turnout are also those that have the most responsive governments. In contrast, richer states do not tend to be more responsive than poorer states.

2 A Theoretical Example

We now present an example based on Besley and Burgess (2000) to illustrate when the government will respond to vulnerable citizens if they are motivated by electoral concerns. The model will underline the reasons why we might expect well developed mass media to enhance government responsiveness based on the role that it can play in disseminating information about

government actions.

There are four groups of citizens. Two groups are ideological and support two ideologically distinct parties labelled A and B . The fraction that supports A is γ_A and the fraction that supports B is γ_B . The ideological citizens are not vulnerable to shocks whereas the remaining fraction $1 - \gamma_A - \gamma_B$ are. These *vulnerable* citizens are in turn divided into two equal-sized groups, each comprising a fraction π of the population. Hence $2\pi + \gamma_A + \gamma_B = 1$.¹ The vulnerable group may be affected by shocks, say due to weather or disease. These citizens are not committed to any ideology and will support the party that has the best reputation for being responsive to the shocks that they experience. If the government does not respond to a shock, their payoff is $x < 0$. While if the government responds, their payoff is zero. Each group experiences a shock with probability β , with draws being independent for each group.

Politicians are of two types: good and bad. A randomly selected politician is good with probability p . This type of politician is always responsive to citizens who experience shocks. In contrast, bad politicians respond only if it is in their interest to do so. All types of politicians receive a payoff of V from holding office. If a shock occurs the cost of responding to it depends upon two things – the size of the affected group and a cost of action reflecting the difficulty of being responsive. We shall refer to a shock that affects only one vulnerable group as *small* and a shock that affects both vulnerable groups as *large*. If the shock is small, the cost of acting will be $c_i\pi$ while it costs $2c_i\pi$ to respond to a large shock, where $c_i \in \{c_L, c_H\}$ and $c_H > c_L$. This cost can be thought as representing the amount of effort that the incumbent must commit to galvanize public action to protect those who have experienced the shock. Let ρ be the probability that the cost shock is low and assume that the cost of being responsive is the same for both groups. We assume that the government has to respond to both or neither group if the large shock occurs – it cannot be selective. A key assumption is:

Assumption 1: $c_H\pi > V > 2\pi c_L$

This says that a bad politician would never wish to respond to any kind of shock if the cost of action is c_H , even if he is promised certain re-election from doing so. However, the gain from holding office is larger than the cost

¹In Besley and Burgess (2000) we show how the analysis can be generalized to the case where there are citizens who are vulnerable and care about ideology.

of responding to a large shock if the cost of action is c_L . Thus, in principle, re-election incentives can be an effective disciplining device to ensure responsiveness when the cost is c_L .

We assume that all citizens observe whether a shock has occurred. However, they may not observe whether the government responds to it. We make the reasonable assumption that any individual who experiences a shock observes whether or not the government responds. However, only with active media do they observe whether the government responded to a shock in the *other* group. Given their shared vulnerability, it is valuable for a group that did not experience a shock to know what happened to the other group. This is because these groups are keen to have good politicians in office and can use their actions to learn about their type. Below, we will contrast these two information regimes to examine the role of the media in making this possible.

The timing of the model is as follows. We begin with an incumbent in office. Nature determines his type and the shock to the vulnerable then occurs along with the cost action c_i . The incumbent then chooses his period one action, i.e. whether to respond to any shock. An election then occurs with the winning candidate choosing policy in period two. We assume that the candidates in all elections are of ideology A or B – there is one of each at each election. We further assume that the parties are controlled by the ideological voters and monopolize the candidate entry process, selecting only ideological candidates for office. The party re-selects the incumbent only if he has been responsive to a period one shock. If not then a randomly selected party member fights the election against a challenger from the other party – each will be responsive in period two with probability p . We look for a perfect Bayesian equilibrium where incumbents choose whether to respond to shocks given the voting rules employed by the four groups of voters. Voters update their beliefs about whether a candidate is good or bad based on their information about the responsiveness of the incumbent in period one. They then vote for their preferred candidate, abstaining if they are indifferent.

We assume that there are shocks to election outcomes due to randomness in turnout. Let $\psi_j(\theta)$ be the probability that a candidate of party j wins if the net fraction of supporters that he enjoys is θ , i.e. the fraction that sincerely prefers him minus the fraction that sincerely prefers the other candidate.

There are two key mechanisms in determining the election outcome. First, voters look at the incumbent's action and try to infer whether he is good or bad. We assume that updating occurs using Bayes rule. Sec-

ond, the extent to which the incumbent's responsiveness changes the election outcome. An incumbent can attract (or lose) at most a fraction 2π of the electorate by being responsive (unresponsive). A bad incumbent who knows that he will win the election for sure will, therefore, never respond. Politics has to be competitive to ensure responsiveness.²

We now turn to the study of a particular equilibrium where mass media makes a difference to the policy outcome. This will be when the following condition holds:

Assumption 2:

$$\psi_j (\gamma_j - \gamma_{-j} + 2\pi) V - 2c_L\pi > \psi_j (\gamma_j - \gamma_{-j}) V > \psi_j (\gamma_j - \gamma_{-j} + \pi) V - c_L\pi,$$

where $j \in \{A, B\}$.

This says that it would be worthwhile for at least one type of incumbent to act if he gains support of a fraction 2π of the voters. However, this is not the case if he only gains a fraction π .³ We now have:⁴

Proposition 1 *Suppose that Assumption 1 holds and that Assumption 2 holds for the incumbent politician. Then, without mass media being active, there is an equilibrium where an incumbent is responsive when the shock is large, but not when the shock is small.*

To see this, note that under Assumption 2, the incumbent has a large enough expected gain from being responsive to a small shock only if he can attract a fraction 2π of the voters to support him. But if the shock is small, then he can attract at most a fraction π of voters, i.e. those voters whom it affected. Since this does not shift his election probability sufficiently (the second part of Assumption 2), then he will not respond to the small shock even if he can pick up π voters.

In the case of a large shock, he can be responsive and gain 2π voters. We now show that doing so is consistent with voters using Bayes rule. Their

²This relates to old theme in political science reflected in Key (1950)'s characterization of the U.S. south whose one-party politics limited political competition with less attention being paid to low income voters.

³We use $-j$ to denote the other ideological type.

⁴There is always an equilibrium where all bad incumbents are unresponsive and are not re-selected by their parties.

updated probability that the incumbent is good conditional on observing that they were responsive in period one is: $\frac{p}{p+(1-p)\rho} > p$. Thus, all vulnerable voters prefer the incumbent to any randomly selected challenger. Thus, he will indeed gain 2π voters and Assumption 2 implies that he prefers this to being unresponsive.

Assumption 1 implies that a bad incumbent will never be responsive if the cost of doing so is c_H . Even in the most optimistic scenario, where he is re-elected with probability zero if unresponsive and probability one if responsive, the gain will be insufficient to outweigh the cost.

The fact that voters respond if the shock is large goes in line with the idea that the group affected has to be sufficiently large to get attention from incumbents. However, we do not require that the group be a majority, only that it be large enough relative to the differential support for the parties among ideological voters.

Now consider what happens when mass media informs both vulnerable groups of the actions that the incumbent has taken in response to any shock.

Proposition 2 *Suppose that Assumption 1 holds and that Assumption 2 holds for the incumbent. Then with mass media active, there is an equilibrium where the incumbent is responsive whether the shock is large or small.*

The key difference between this case and that described in Proposition 1 occurs when the shock is small. Without media, there was insufficient political support to make being responsive worthwhile. However, with active media, being responsive to a small shock generates sufficient reputational gains, under Assumption 2, to make being responsive worthwhile since it will attract the support of the entire vulnerable population. Thus, the model predicts that the government will be more responsive when mass media is active, other things being equal.

The basic prediction is that the threshold at which the government is responsive to a group is lower when the media is active as the government's reputation is known to all vulnerable voters, not only those who have been hit by a shock in the current period. Thus, the size of the group hit by the shock is less important – the political power of the group is driven by the size of the *potentially* vulnerable group who care about whether they have an incumbent who is likely to be responsive in future.

The model is also helpful in predicting the relationship between the entrenchment (or vulnerability) of the incumbent as measured by $|\gamma_A - \gamma_B|$ and

responsiveness. If $|\gamma_A - \gamma_B|$ gets too large, then neither type of incumbent will wish to be responsive as it will not affect the electoral outcome. If the outcome is highly competitive, so that $|\gamma_A - \gamma_B|$ becomes small, then the incumbent will be responsive for large and small shocks whether or not the media is active. Assumption 2 depicts an intermediate case.

The model developed here is consistent with the empirical findings of Besley and Case (1995) on effect of term-limits on U.S. Governors' responses to natural disasters. They find that Governors who do not face re-election incentives because they are term-limited are less responsive when a natural disaster hits. We now look at a different context using state level data from India.

3 Suggestive Evidence from India

The theory suggests two things that we can confront the data with: (i) responsiveness should be greater where information flows are more developed as this enables vulnerable citizens to monitor politicians and penalize them for not responding to their needs (ii) responsiveness should be greater where political participation is greater as this increases the likelihood that citizens will punish unresponsive incumbents.

We study these issues using responses by state governments to food shortages in India. Food shortages caused by droughts and other types of natural shocks represent a significant source of insecurity for large fractions of the population in India. Well articulated state response systems comprising measures such as public food distribution have been developed to deal with this threat and help citizens avoid famine and hunger. The principles of response date back to the Famine Commission Report of 1880 which contains detailed guidelines for local administrators about the anticipation, recognition and relief of famines.⁵ This, however, leaves the question of implementation open and Sen (1981) points to the fact that these guidelines have, on occasion, been ignored such as during the Bengal Famine of 1943 where between 1.5 and 4 million people lost their lives.

Following Independence in 1947, the coming of democracy and the rise of mass media, it is argued, have helped to strengthen accountability within

⁵The Report was a response to frequent and severe famines involving the deaths of millions which were the cause of considerable social unrest and political concern (see Dreze 1991).

the calamity relief system. India is a federal democracy and as calamity relief is primarily a responsibility of state governments the introduction of elections to state legislative assemblies represents a mechanism through which politicians are held accountable for responding to food shortages occurring within their jurisdictions. India is distinguished from the bulk of other low income countries in having developed a relatively free and active press in the post Independence era.⁶ The press in India has been ascribed a major role in monitoring the actions of politicians and in ensuring their responsiveness to food shortages which occur at frequent intervals. Ram (1991: 186) describes its role in averting crisis: “Over time, it has tended to bring out the facts in the field with elements of vivid descriptive and human interest detail; and to expose the failure of government authorities to recognize the problem, its causes and early symptoms, and to respond quickly and adequately in terms of crisis prevention, management, and relief.” Sen (1984: 84) observes that: “India has not had a famine since independence, and given the nature of Indian politics and society, it is not likely that India can have a famine even in years of great food problems. The government cannot afford to fail to take prompt action when large-scale starvation threatens. Newspapers play an important part in this, in making the facts known and forcing the challenge to be faced.” The question we want to examine in this paper is whether media development and participation in state elections are associated with higher levels of responsiveness to food shortages by state governments.

To examine the implications of the theory, we use annual data from the sixteen main Indian states for the period 1958-1992 (see Besley and Burgess, 2000 for details). For each state s and year t , our measure of the response of state governments is the total amount of foodgrains per capita distributed via the public distribution system, x_{st} , and we consider how this depends upon foodgrain production per capita: f_{st} which is the food shock measure. Hence, for the sixteen states, we run a panel data regression of the form:

$$x_{st} = \alpha_s + \beta_t + \theta_s f_{st} + \varepsilon_{st},$$

where α_s are state fixed effects and β_t are year dummy variables. The coefficients θ_s for $s = \{1, \dots, 16\}$ capture average responsiveness in state s .

⁶Note that this is in strict contrast to TV and radio which were mainly under state control hands during the 1958-1992 period. In contrast only 2% of newspapers in India are owned by central and state governments.

This measure tells us how much food, on average, is publicly distributed as a response to food production shocks.

Table 1 gives the rank order of these responsiveness coefficients (θ_s) – the state of Bihar is least responsive while Kerala is at the top. We now compare this ranking with the ranking of other state characteristics averaged over the data period. Specifically, we consider state income per capita, newspaper circulation per capita, turnout in state elections, entrenchment of the ruling party, political turnover, and literacy.⁷ Table 2 gives the rank correlations between the responsiveness coefficient and the characteristics with their significance levels. While crude, Tables 1 and 2 give us an idea about the underlying differences between more and less responsive states.

The first striking feature of Table 1 is that the responsiveness ranking bears little relation to income per capita. Richer states do not appear to be more responsive than poorer states. This is confirmed in Table 2 where we see that rank correlation coefficient between responsiveness and income per capita is insignificant. This is surprising as we might expect that the technological capacity to respond to food shocks by stockpiling and distributing food via the public distribution system might be more developed in richer states.

This contrasts with a ranking based on newspaper circulation per capita which more closely mirrors the responsiveness ranking in size and significance. Those states that are most responsive to food production shocks also tend to be those with high levels of newspaper circulation and this is confirmed by the correlation coefficient between these two rankings being highly significant in Table 2. It is also interesting to note that levels of newspaper circulation are unrelated to income per capita (Table 2). Hence, media development measured by news paper circulation is more closely associated with responsiveness than is economic development measured by income per capita.

In Tables 1 and 2 we also find that political participation as proxied by turnout in state elections is associated with government responsiveness. Turnout is a crude way of measuring the likely severity of electoral threats – the mechanism that the theory highlights for fostering responsiveness. We also experimented with measures of political competition. Our entrenchment

⁷Looking at turnover and entrenchment is a crude effort to capture $(\gamma_A - \gamma_B)$ from the theory. The theory as laid out above does not say anything directly about turnover. In Besley and Burgess (2000), we show how higher turnover can be thought as making the reelection mechanism work more effectively.

variable is the electoral margin of the party of the chief minister in the state. Political turnover is the frequency with which the party of the chief minister changed over the data period. These could be thought of as trying to proxy for $|\gamma_A - \gamma_B|$. Neither of them appears to be significantly correlated with the responsiveness ranking of the states.

Literacy may be important in enabling effective electioneering, through leaflet drops etc. It may also be a proxy for the ability of state citizenry to absorb and act upon information from the press and other forms of media. Table 1 shows that it is positively correlated with government responsiveness. Moreover, the rank correlation is statistically significant (see Table 2). Per capita newspaper circulation and literacy are also highly correlated. This suggests a role for education in creating literate citizens who are more able to monitor politicians and make them responsive to their needs.

Taken together our findings suggest that development of press media, electoral turnout and literacy are correlates of responsiveness whereas income per capita is not. Thus, they highlight the importance of political and social development as basis for effective government action. Institutions that promote the flow and dissemination of information and democratic participation may therefore be an important means for improving the well-being of vulnerable groups that rely heavily on state action. This is particularly important in poor countries like India where swift government action is needed to prevent disaster.⁸ The findings in the data are also broadly consistent with the ideas in the theoretical example. In Besley and Burgess (2000), we take a much more extensive look at the data (exploiting both cross-sectional and time-series variation in the data) and consider a number of other dimensions of responsiveness and shocks. This further confirms the importance of media and political participation in explaining responsiveness.

4 Concluding Comments

It is widely appreciated that the study of the mass media is a relatively neglected area in the social sciences. Viewing the government as a conscious actor, responding to incentives, gives mass media a prominent role in the

⁸The lack of democracy and of freedom of information have been pointed to as reasons behind why China experienced a major famine between 1958 and 1961 with excess mortality figures ranging between 16.5 and 29.5 million whereas India has not experienced a major famine in the post-Independence era (see Dreze and Sen, 1989).

solution of political agency problems. In particular, this can enhance the responsiveness of government to citizens' needs. This is broadly consistent with data on government responsiveness to shocks in India suggesting that these ideas go beyond their theoretical significance. Understanding better what makes governments better servants of the people, and how strengthening institutions supports this role, defines a rich agenda for future work in political economy.

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5 Data Appendix

Data used in this paper is drawn from various Indian sources and is averaged over the period 1958 to 1992 for each of the sixteen major Indian states listed in Table 1. Our measures of food shortage (total food grain production measured in tonnes) and government response (public distribution of food grains measured in tonnes) come from the Bulletin on Food Statistics, Ministry of Food and Agriculture, Directorate of Economics and Statistics, Government of India. The primary source for data on state income is an annual government publication Estimates of State Domestic Product (Department of Statistics, Department of Statistics, Ministry of Planning). Our media penetration variable is the average number of copies of newspapers/periodicals sold or distributed free per publishing day and comes from Press in India, Annual Report of the Registrar of Newspapers for India, Ministry of Information and Broadcasting, Government of India. Response, food shock, newspaper and income series are all expressed in per capita terms using The population estimates are constructed using interpolated population data from the censuses for 1951, 1961, 1971, 1981 and 1991 (Census of India, Registrar General and Census Commissioner, Government of India). Data on electoral turnout in state elections comes from Butler, Lahiri and Roy (1991) *India Decides : Elections 1952-1991*. (New Delhi : Aroom Purie for Living Media India). Political turnover is a dummy variable which takes a value of 1 if the chief minister is replaced during an election year and is 0 otherwise. Our measure of political entrenchment is the no of seats in the state assembly won by the party of current chief minister in the last election. Literacy data comes from the 1951, 1961, 1971, 1981 and 1991 Indian censuses (Census of India, Registrar General and Census Commissioner, Government of India) and has been interpolated between census years.

TABLE 1: RANKINGS OF RESPONSIVENESS AND OTHER CHARACTERISTICS OF INDIAN STATES, 1958-1992
(1 = HIGHEST)

State name	Responsiveness	Per capita income	Per capita newspaper circulation	Electoral turnout	Political entrenchment	Political turnover	Literacy rate
Kerala	1	13	1	1	16	1=	1
Maharashtra	2	3	2	10	3	8=	2
West Bengal	3	5	4	6	6	10=	5
Tamil Nadu	4	8	3	2	11	11	3
Gujarat	5	4	6	11	8	5=	4
Assam	6	10	15	9	12	5=	6
Uttar Pradesh	7	11	8	13	1	4	13
Andhra Pradesh	8	9	10	4	4	8=	11
Karnataka	9	6	7	8	7	10=	7
Rajasthan	10	15	9	12	9	6	15
Punjab	11	1	5	7	13	7	8
Orissa	12	12	16	16	10	1=	10
Haryana	13	2	13	5	14	5=	9
Jammu & Kashmir	14	7	11	3	15	9	16
Madhya Pradesh	15	14	12	15	2	2	12
Bihar	16	16	14	14	5	3	14

Note: Please see Data Appendix for definitions and sources of different variables.

TABLE 2: SPEARMAN RANK CORRELATION COEFFICIENTS BETWEEN RANKINGS OF RESPONSIVENESS AND OTHER STATE CHARACTERISTICS

Spearman	Responsiveness	Per capita income	Per capita newspaper circulation
Responsiveness		0.2588 (0.3331)	0.7529 (0.0008)
Per capita income	0.2588 (0.3331)		0.3765 (0.1506)
Per capita newspaper circulation	0.7529 (0.0008)	0.3765 (0.1506)	
Electoral turnout	0.4118 (0.1130)	0.4059 (0.1188)	0.4971 (0.0501)
Political entrenchment	-0.0088 (0.9741)	-0.2088 (0.4377)	-0.0147 (0.9569)
Political turnover	-0.2646 (0.3220)	-0.5440 (0.0294)	-0.4169 (0.1082)
Literacy rate	0.8147 (0.0001)	0.4324 (0.0944)	0.6559 (0.0058)

Note: Please see Data Appendix for definitions and sources of different variables.