

The Political Economy of Disaster Relief Spending

Ties that bind. Tactical Redistribution in Coalition Politics; Evidence from Indian Disaster Relief.

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Preliminary Draft – For Discussion Only.

Abstract

India's unique geo-climatic conditions make it vulnerable to natural disasters. Timely availability of adequate financial resources is essential for short-term recuperation and long-term recovery. While state governments in India are assigned the primary responsibility of providing calamity relief, vertical fiscal imbalances created by India's federal system make state governments dependent on Central resources to meet their expenditure obligations. Calamity relief support provided by the Center is included in the intergovernmental transfers meant to correct such imbalances. While pre-determined formulas are used for some transfers, there is considerable discretion in allocating other classes of transfers, including support for calamity relief. In this paper, I use panel data on center-state transfers to examine the hypothesis that the political importance of the states, measured by their importance in the ruling coalition, influences the level of calamity relief transfers to the states. I control for variables such as primary budgetary deficit of the states, state domestic product and state fixed effects in the panel regressions, and also a proxy for disaster severity. I find evidence against the bargaining view of federalism within the context of disaster relief spending; states with greater bargaining power seem to receive smaller discretionary transfers. Though counter-intuitive, these results highlight certain important characteristics of coalition politics.

Key Words: Natural Disasters, Coalition Politics, Fiscal Federalism

JEL Classifications: D72, H70, O53, Q54

I. Introduction

Even though natural disasters are triggered off exogenously, often resulting from an extreme natural event interacting with a vulnerable social setting, they are seldom immune from politics. Political actors at the national and sub-national levels of government are expected to respond to external shocks: mitigate the effects of earthquakes, assist flood victims, and safeguard the interests of their electorates through prevention and preparedness. For governments in affected countries, the motivation to respond to emergencies created by natural disasters should seem obvious. Any human life in certain danger must be saved.

One of the greatest insights of Public Choice theory, highlighted by Gordon Tullock in his monograph *'Exchanges and Contracts'*, is that politicians like the rest of us devote most of their efforts to personal gains. Sobel and Leeson (2006) in their analysis of the government's response to Hurricane Katrina argue that the choices and actions of politicians and bureaucrats are motivated by the incentives they face. Recent empirical evidence resonates with their arguments. In the context of natural disasters, the voters' ability to punish their leaders for events outside their control in fact motivates the timing and quality of government response. For example, Achen and Bartels (2004) find that leaders are punished for droughts, floods and even shark attacks that occur under their watch.

Evidence highlighting the political dimension of disaster relief in the United States is ample. Levitt and Snyder (1995) for example show that the Democratic Party skewed disaster relief spending in favor of democratic voters. A simulation completed by Garrett and Sobel (2008) finds that, "Nearly half of all FEMA disaster relief is explained by

political influence rather than actual need.” Downton and Pielke Jr. (2001) find considerable evidence of presidential discretion in contributing to trends in federal disaster costs related to floods, while Healy and Malhotra (2009) find a significant political component in determining the size and direction of relief spending. Presidential declaration of a disaster or emergency is key for federal disaster relief to flow to local governments, businesses and individuals in need. Such discretion allows the ruling party to use federal resources towards securing private ends, such as re-election.

In this paper, we attempt to analyze the political manipulation of disaster relief in the context of India. India like the United States is a representative democracy. However unlike the United States, which operates under a two party system, India is a multi-party democracy. Since 1977, varying coalitions of different political parties have formed the central government. Specifically, we test whether the central government biases disaster relief spending in favor of the states and districts governed by coalition members. There are two sources of disaster relief in India spending. The Calamity Relief Fund, which provides formula based assistance to the state governments, and the National Calamity Contingency Fund, which provides assistance to state governments at the discretion of the center.

We take a public choice approach to evaluate the incentives facing a coalition government, and the subsequent effects on the direction and flow of calamity relief spending. Focusing on the Natural Calamity Contingency Fund helps determine the impact of political bargaining on discretionary spending. This contributes to the existing literature; wherein most analysis of political bargaining focus on the non-discretionary or rule based categories of transfers and spending.

II. Externalities in Political Decision Making

Governments in a federal-democratic system may create and exert externalities.

Because of the public goods aspect of government spending, payment is compulsory even if the disbursement of resources on public good provision lacks uniformity. The ruling majority is able to exert the externality on the minority and those with limited economic bargaining power. One of the most prominent examples of biased public goods provision is the transfer of resources from the Central government to the sub national governments. The transfers support state government spending on public good provision, and help states execute centrally sponsored development plans. Empirical evidence suggests that in India political power tends to positively affect the transfer of resources, while economic size of any state has a positive but insignificant effect on resource transfers (Rao and Sigh, 2003; Dasgupta, Dhillon and Dutta, ; Biswas and Marjit).

An effective system for disaster management has five phases: prevention, preparedness, containment, recovery and learning (Kovoor-Misra & Misra, 2007). In the absence of any concrete institutional arrangements for prevention or preparedness (insert reference), the only forms of disaster relief provided by the Indian Central and sub-national governments provide are containment and recovery. Expenditure on disaster relief is considered an integral part of the developmental social expenditure, and large transfers from the Central to the sub-national governments are often justified on this account. Even though voters are imperfectly informed about government policy decisions and implementation, the visible and often long-term affects of natural disasters on the electorate's lives and livelihoods, raises the accountability of their elected official. The elected official must then bargain to attain the most resources for her constituency, to

ensure effective recovery. Since rewards from political bargaining are associated with political power, those with some degree of clout in the Central government, or those with the power to effectively challenge the political fortunes of the Central government are likely to be most successful.

A weak opposition and a coalition government at the Center have characterized the Indian polity since the late 1960s. It follows that members of the ruling coalition have the best bargaining capacity. Economically weaker states and states with limited or no representation in the ruling coalition are at a disadvantage, given their limited ability for political bargaining, in providing effective and efficient relief from natural disasters. This follows from the assumption of the models of distributive politics in an ongoing federation – that the central government as well as constituent units maximize their own welfare.

III. Natural Disasters

In recent years, there has been a significant increase in the human fatalities and economic damages caused by natural disasters. According to the annual disaster statistical review¹, published by the Centre for Research on the Epidemiology of Disasters (CRED), natural disasters in the year 2010 had a devastating impact on human lives and livelihoods, with over 2,97,000 fatalities and economic damages worth US\$123.9 billion, an increase of 160.4% compared to 2009. Moreover, there is growing scrutiny of government competence in managing and mitigating the effects of natural disasters (Besley and Burgess, 2002; Healy and Malhotra, 2009; Sobel and Leeson, 2006).

¹ http://reliefweb.int/sites/reliefweb.int/files/resources/fullreport_37.pdf, accessed 09/20/2011

Natural disasters are not uncommon in the Indian sub continent. India's unique geo-climatic conditions make it vulnerable to natural disasters². Among her 35 states and union territories, 25 are disaster prone. The average loss of human life every year is 3,600. About 60% of the Indian landmass is prone to earthquakes of various intensities. Forty million hectares of land is vulnerable to floods and 8% of the area is prone to cyclones. About 68% of the area is susceptible to periodical droughts. More than 42% of the Indian population falls below the international poverty line. The Indian government has acknowledged that the poor and the under privileged are the worst affected from calamities and natural disasters.

Several social scientists have expressed concerns about the attitudes towards disaster prevention and management in India. Roy (1978, p. 1728) in his evaluation of the 1978 flooding of West Bengal argued that "... West Bengal cannot survive without a major shake-up in the Economic and Political structure of the country as a whole- a shake up that would open up the possibility of generating more resources and of using them for more worthy causes than under the existing set up". Kapur (2005, p. 4551) has criticized the government for its treatment of disasters, both on account of administrative laxity and a failure to plan. An article published in the Economic and Political Weekly³ in the aftermath of the Gujarat cyclones in 1998 criticized the state and local administration for a delayed response and "utter lack of disaster preparedness."

² Disaster Management in India, GOI, Ministry of Home Affairs, pp. 3

³ 'Disasters Waiting to Happen.'

Source: Economic and Political Weekly, Vol. 33, No. 24 (June 13-19), p. 1419

Accessed: 09/18/2011

In spite of a high vulnerability to natural disasters, the lack of preparedness and a poor track record with disaster relief points to possible inefficiencies in the government machinery dealing with natural disasters.

IV. Coalition Politics: Control over the administration of resources?

The Indian Constitution exhibits a clear centripetal bias in the distribution of fiscal powers (Rao & Singh, 2005). Sury (2007, p. 433) claims that the financial powers of the Central government are overwhelming. Chakrabarty (2006, p. 25) believes that “Despite a detailed distribution of power between the two levels of government, the Union government is constitutionally stronger – simply because the framers wanted it so.” Until the general elections of 1967, the Congress Party controlled the central government, and most state governments, giving it complete control and discretion in the use of the nation’s fiscal resources. Non-Congress governments came to power in some of the most influential states for the first time in 1967, setting in an era of coalition governments.

Several small, regional parties joined forces with other opposition parties, to offer an effective challenge to the Congress party. These political parties were ideologically different, and also represented varying regional interests. The first political coalitions were not only a shrewd affiliation of electoral interests; they also came into being through pre-election alliances. Dixit and Londregan (1998) argue that “the political power of (political) groups is positively affected by a greater willingness to compromise ideology for private consumption.” In West Bengal, for example, the state government constituted political parties from both the left and right of the political spectrum. Other than the Congress party controlling fiscal resources, there were concerns about political biases in determining the flow of resources from the center to the states. Once the Congress party

lost power in the states, it was forced to share power with other parties, and party coalitions in these states. The state governments now effectively challenged the decisions of the Congress government at the Center. Besides, the need for opposition support in the parliament to pass legislations hurt the Congress' dominant position in the Indian polity.

In explaining the changing political dynamic of the Indian economy, most political analysts have either highlighted the mobilization of new recruits and groups in the political process, or the failure of the Congress in fulfilling its electoral promises. Others believe that the growing centralization of power within the Congress party drove away party members into setting up their own political party, or partnering with the opposition. This included the disgruntled or sidelined party members, who could no longer access the party's resources. Thakurta and Raghuraman (2004, p. 31) argue that the split in the Congress party was result of the culmination of a power struggle within the party. Coalition politics is representative, more of unified political interests, than the interests of the electorate. Accordingly, the need to claim a part of the Center's fiscal resources, may have prompted the opposition to come together to dislodge the Congress from its position of power.

Rao and Singh (2005) argue that in a federal structure, characterized by a single, rigidly hierarchical political party controlling the national and all state level governments, outcomes will resemble those of a centralized unitary system. Congress dominance of the Indian polity did just that. Riker (1975) measures decentralization based on an index of decreasing concordance between the party in power at the Center, and the party in power in any state. According to this measure, there was growing decentralization in India after 1967.

That the fortunes of the Congress were adversely affected by the growing decentralization is evident in the government trying to invoke Article 356 of the constitution, to impose President's rule, and remove elected state governments. The decentralization of the Indian polity, as defined by Riker was short lived. Within a decade, there was increasing concordance between the political parties in control of the Central and state governments. The general elections of 1977 saw the Congress loose power at the Center. It was replaced by a coalition of opposition parties. Some of them also controlled the state governments. Sharma (2010, p.149) believes that the ruling coalition in 1977 was both organizationally and ideologically weak. It was the result of a hastily assembled coalition of different opposition groups, united mainly by their opposition to the Congress and its policies.

V. The Political Economy of Intergovernmental Transfers

As discussed above, the Indian constitution accords great powers to the Central government. Most broad-based taxes have been assigned to the center, including taxes on income and wealth from non-agricultural sources, corporation tax, taxes on production (excluding those on alcoholic liquors) and customs duty. Even though a long list of taxes is assigned to the states, only the tax on the sale and purchase of goods has been significant for state revenues. Meanwhile subjects like public health, agriculture and irrigation, all of which involve considerable government expenditure are assigned to the states. This bias in the assignment of powers and functions has made vertical imbalance, a constant feature of the Indian federal system. Rao and Singh (2001) find that for the period 1985-6 and 1995-96 while the share of states in raising revenues remained constant, their expenditure share has shown a constant increase.

Inter-governmental transfers in India have been justified on account of this imbalance. Even though Article 293 of the Indian constitution allows the states to borrow from the market, because all state governments are indebted to the center, they must obtain the center's permission for such borrowing, effectively leaving the state with little discretion. In the absence of external borrowing, transfers from the central governments contribute significantly to state finances. In per capita terms at constant (1981-82) prices, central transfers to states increased by over 2.5 times, from Rs.77 in 1975-76 to Rs.194 in 1993-94⁴.

Fiscal-federal arrangements in India, allow for multiple channels of transfers from the center to the states. First, the Finance Commission⁵ decides on tax shares and makes grants. Transfers recommended by the Finance Commission are categorized as statutory and rule based. The Constitution accords the finance commission an independent, semi-judicial status, making such transfers fair and transparent. In practice however, finance commission recommendations have failed to meet the desired objectives. Besides, over time, a major proportion of transfers have been moved outside of the purview of the commission. Second, the Planning Commission⁶ makes grants and loans for implementing development plans. Most experts believe that the planning commission is a political body, and practices considerable discretion in allocating funds. The *Gadgil* formula, used by the planning commission to make plan transfers is determined by

⁴ Indian Economic Statistics, Ministry of Finance, Government of India

⁵ Set up by the President every 5 years – makes recommendations on the distribution of net tax revenues between the union and the states

⁶ Set up in 1950 by a resolution of the Government of India, it is responsible for assessing all resources of the country and making plans for effective and balanced utilization of resources and determining priorities

consensus in the National Development Council⁷ (NDC) where all states are members. Finally, various ministries give grants to their counterparts in the states for specified projects either wholly funded by the center (central sector projects) or requiring the states to share a proportion of the cost (centrally sponsored schemes). The Planning Commission monitors these projects, and such transfers are entirely discretionary. Centrally funded projects are meant to finance activities with a high degree of interstate spillovers, or those that qualify as merit goods (poverty alleviation, family planning) and social expenditure. Political and bureaucratic discretion often plays an important role in determining the amount of such transfers and the pattern of their distribution. Calamity relief qualifies as a social expenditure of the state. Rajaraman (2010) finds evidence to suggest that while social expenditure in India has increased modestly since the 1990s, the states' share in such expenditure has decreased for the same time period. Even though the constitution assigns responsibility for social expenditure to the sub-national governments, there has been a rise in the financial intervention by the central government.

Plan transfers are channeled by the Central Government under the provision of Article 282⁸ of the Indian Constitution, which also allows the Center or State to make a grant for any public purpose. "The Union or a State may make grants for any public purpose, notwithstanding that the purpose is not one with respect to which parliament or the Legislature of the State, as the case may be, may make laws." These grants are made at the discretion of the government, and are intended for unforeseeable emergencies (like droughts, famines, and other natural calamities). Rao & Singh (2001) find an increase in the discretionary element of transfers after 1969. The proportion of transfers

⁷ The Prime Minister chairs the NDC and its members include all cabinet ministers at the center, Chief ministers of the states, and members of the planning commission.

⁸ <http://lawmin.nic.in/coi/coiason29july08.pdf>, accessed on 10/1/2011

recommended by the Finance Commission (statutory transfers to total current transfers) declined from 65 percent during 1969-74 to less than 60% during 1991-95. Formula based transfers from the Finance Commission and Planning Commission together have also tended to decrease relative to discretionary transfers. The share of discretionary transfers has increased steadily from 12 percent in 1969-70 to about 20 percent in 1994-95.

A sound system of intergovernmental transfers requires that the amount and frequency of transfers should be pre-determined, and based on evidence of the adoption of a sound financial management by the states. Rao and Singh (2005, p. 254) argue however that, “Center-state fiscal transfers are a particular, quantifiable expression of the complex relationship between the national and sub-national governments in India.” For most part, this complexity arises from the possibility of political bargaining, in an increasingly fluid political system. Not only is the pattern of intergovernmental transfers in India representative of the political strength of state governments, it has also set itself up as rival to the state optimally utilizing its tax base. The incentives generated by the system do not foster good financial management, and to some extent, make state governments less responsive to the needs of its electorate.

VI. Political Discretion in Financing Relief Expenditures

Like with all major heads of expenditure, the Indian states are considered incapable of dealing with natural disasters on their own. Thus, even though the primary responsibility of disaster relief lies with the states, financing of relief and rehabilitation expenditures is treated to be a joint endeavor of the central and state governments. In spite of the Finance Commission making recommendations about the Center’s contribution to financing relief

expenditures, the process is highly politicized, and the decision making power lies with agents of the central government. Based on the recommendations of successive Finance Commissions, the Central government provides financial assistance to the states both through formula based, and discretionary transfers.

Disaster relief financing is an important aspect of federal fiscal relations. Finance commissions from the second finance commission (1957-62) on, have commented on the subject of 'financing of relief expenditure.' The second finance commission (FC-II) initiated the 'margin money scheme', wherein the states were required to set apart annually from their revenues, sizable sums, to be accumulated in a fund for meeting expenditure on natural calamities. Subsequent commissions had similar provisions in their terms of reference.

The ninth finance commission (1989-1995) recommended the establishment of the Calamity Relief Fund (CRF) for each state, the size of which was decided on the basis of the average of the actual ceiling of expenditure approved for a state over a ten-year period ending 1988-89. Seventy five percent of the fund was to be contributed by the center. The CRF provides immediate relief to victims of cyclones, droughts, earthquakes, fires, floods, tsunamis, hailstorms, landslides, avalanches cloud bursts and pest attacks. The Center's share is paid in two installments, the second installment is released only after the release of the annual report on natural calamities, detailing the expenditure incurred on relief. The ministry of home affairs is the nodal ministry for overseeing the relief operations for most natural calamities.

The tenth finance commission recommended setting up of the National Fund for Calamity Relief (NFCR) to assist any state affected by a calamity of rare severity. The

management of the fund was assigned to the National Calamity Relief Committee, chaired by the Union minister for Agriculture. The eleventh finance commission (2000-2005) found that the entire corpus of the NFCR was exhausted in a period of three years, and that it had failed to meet the requirements of calamities of rare severity. FC-XI recommended setting up of the National Calamity Contingency Fund (NCCF), with an initial corpus of Rs. 500 crore, to be recouped by the levy of a special surcharge on central taxes. A high level committee (HLC) comprising the agricultural minister, home minister, finance minister and the deputy chairman of the planning commission was set up to administer the NCCF. The assistance released from the NCCF meant for immediate relief and rehabilitation. In order to make a claim on the NCCF, the state government must submit a memorandum to a team put in place by the central government. An inter-ministerial group then assesses the report of this team, before making recommendations to the HLC. Together with the funds released from the calamity relief fund, the resources from the national calamity contingency fund support the state government efforts for relief and rehabilitation.

The bureaucratic strong hold on the disbursement of resources for relief expenditure and the involvement of key leaders of the central government with obstruction powers not only creates what Sobel and Leeson (2006) call the “tragedy of political commons” – slow and delayed action control; it also allows significant discretion in the way these resources are disbursed. In the next section we discuss the significance of resource redistribution for coalition politics.

VII. **Redistribution of Resources – Sustainability of Coalitions**

Mesquita (1975, p.3) defines a coalition as a “group of individuals (or groups of groups) who share at least one goal and who agree to pool at least some of their resources in pursuit of that shared goal.” The going political climate in any country often dictates the emergence of coalitions. The Indian political situation in the late 1960s was conducive for coalition formation. Political parties came together to dislodge the Congress party from the monopoly it enjoyed over the central government machinery. The trend has sustained, and coalition governments are the most prominent institutional feature of Indian politics.

For a coalition to form, each political candidate or political party, must consider the utility from joining a coalition, or joining a certain coalition in preference to another. Since 1967, Indian politics has been witness to widespread and diverse coalitions. A simple assessment of the coalitions in India suggests that ideological considerations have never been significant in determining coalition partnerships. Dr. Lohia, an active member of the Samyukta Socialist Party (SSP) and the early anti-Congress alliance blatantly discounted ideological considerations, if they jeopardized the opposition’s hope of gaining control over the government. Besides, in most cases, rifts between coalition members have been a result of the differing political aspirations, and not differing policy preferences.

According to Mesquita (1975), “... membership in a ruling government assures a party of at least some influence over the determination of priorities and the allocation of resources.” In parliamentary democracies like India, a political party must control a majority of seats in the parliament before it can form a government. If no solitary party is

large enough to satisfy the requirements for winning, then a coalition is likely to form. When a coalition satisfying the rules for winning forms, the members control the allocation of scarce resources. A winning coalition can deprive other political parties of any influence over the allocation or utilization of these resources (Mesquita 1975).

An alternate, less obvious form of resource utilization can include vote buying. Coalition governments can choose to expend larger resources in areas with not sufficient electoral support for members in the ruling coalition. Coalition members might also attempt to 'win friends' with high levels of resource spending. These might include popular political leader or parties who are not currently a part of the coalition, but might serve as a potential ally.

In any case, there is a strong incentive for political contestants to join a winning coalition, even if they are required to share control over some of the benefits they secure. Members of the winning coalition will typically cooperate with each other in pursuit of their shared objective. There is evidence of threat to coalitional stability because of the incompatibilities in member goals outside of the common coalition objectives.

While there have been several instances of failed coalitions in the history of Indian politics, most of them have been successful, and have managed to last the entire term in office. Members of a successful coalition bargain to reconcile their incompatible objectives, in pursuit of the common goal, or make compromises. Political bargaining, in the context of coalition politics has been a distinguishing feature of Indian federalism.

Mesquita (1975) argues that the redistributive condition has been a key feature of Indian coalitions and argues that it provides the basis for coalition formation among political groups that have at least partially incompatible goals. The desire for

redistributive benefits provides the incentive for continued membership in a coalition. Coalition benefits primarily include control over administration of resources through specific ministerial positions. These positions control more patronage, more resources and more visibility than any other state level positions in India. They deal with policies, which are of greatest concern to the population, and those who control resources can influence lives of all citizens in the country.

In the context of Indian politics and coalition governments, redistribution serves two purposes. A stable coalition provides uninterrupted access for one or several political parties to the Central government machinery. In order to accomplish this, members of the coalition must be willing and able to redistribute resources. With increased stability, the redistribution condition might also suggest that members of a ruling coalition can defect, if a different coalition offers larger resources. These members are typically Members of Parliament (MPs). Elected by popular ballot, they represent their constituencies at the national level. They contribute to the coalition, seats they secure in the parliament and in return expect larger central government resources for their constituency. Expending larger resources on their constituencies increases the probability of these political candidates retaining incumbency. This in turn contributes to greater coalitional stability. This follows from the redistributive condition for coalition formation. According to Mesquita (1975), the redistributive condition requires that the "... benefits must be convertible into the currency of political influence." In other words, any political candidate may not wish to maximize control over resources, for which the coalition took shape, but rather have enough resources to facilitate acquiring more resources in the future. The political impact of spending is significant for India.

Healy et al. (2010) find that voters tend to target their dissatisfaction from poor rainfall at the incumbent politician, while the opposition gains in terms of voter support. The obvious way to remedy the situation is for the incumbent to expend more resources to increase the ‘welfare’ of her constituents.

Models of voter behavior tend to suggest that voter memory is limited. Healy et al. suggest that rainfall shocks two years before an election do not hurt incumbent fortunes. With natural disasters, however, as long as evidence of destruction, and lack of rebuilding efforts is visible, incumbent fortunes remain at stake. Consequently, it is in the rational self-interest of the incumbent to increase visible spending in a disaster affected area. In addition, it is also in the interest of the opponent to counter the incumbent’s strategies. If the opponent is a member of a ruling central government coalition, and the incumbent not, the coalition might direct larger resources to the electorate, attempting to voter persuasion against the incumbent. While the electorate is often uninformed while voting based on the candidate’s political position, the visibility of the destruction from natural disasters, and the role of the mass media, may in fact make voter decisions more ‘educated’. This augurs well with the ‘vote buying’ hypothesis discussed extensively by Tullock (1962).

VIII. Data and Preliminary Empirical Analysis

The analysis focuses on the period 1997-98 to 2010-11. We estimate a model with state specific fixed effects for twenty-one Indian states. Table 1 provides a list of states in the sample and values for the key variables in the analysis: resources released as part of the natural calamity contingency fund, resources released under the calamity relief scheme, two measures of the economic performance of states and the coalitional status of

the chief minister's political party. Formal definitions and data sources are offered in **Appendix 1**.

The essential variables in the analysis relate to the release of resources from the natural calamity contingency fund and political alignment. The dependent variable in all models is the log of the quantity of resources released from the national calamity contingency fund, which represent discretionary resource transfers from the center to the states, measured in (ten-million) Indian Rupee. Data on the national calamity contingency fund is obtained from the Ministry of Finance, Government of India and the National Institute of Public Finance and Policy, New Delhi, India.

The key independent variable relates to political alignment. Following Rao & Singh (2003), political alignment captures whether the political party to which any state chief minister belongs, is also a member of the ruling political coalition at the center. If political alignment is effective in influencing the size and direction of discretionary transfers from the center to the state, we expect to find a positive relation between political alignment and the flow of resources from the natural calamity contingency fund.

The remaining control variables relate to the state's income and budgetary performance. It is common in the literature on fiscal federalism to control for the economic performance of states. We use the Net State Domestic Product (NSDP) as a measure of the state's income. States with a larger NSDP are less likely to be dependent on Central Government resources, while making a larger contribution to the Center's tax revenue. We use the state's primary deficit, lagged by a year, to control for the state's dependence on the center for support with unforeseen expenditures. The data on NSDP and primary deficit is taken from the *Handbook of Statistics on the Indian Economy*,

published annually by the Reserve Bank of India. The variable *elec* is a dummy for whether there was a state-assembly election in any given year. An election year should increase the resource flow in favor of states, which are politically aligned to the central government.

Thus the primary model of the relation between the resources released from the NCCF and political alignment is:

$Nccf_{it} = \alpha + \alpha_1 t + \alpha_2 Coalition_{it} + \alpha_3 A_i + \alpha_4 X_{it} + \epsilon_{it}$; where A_i is a vector of unobserved but fixed state specific confounders and X_{it} a vector of observed time-varying covariates.

Table 1 gives the results of five variants of the primary model. Column 1 ignores the economic variables and is estimated using state fixed effects, column 2 includes both economic and political variables and is estimated using state fixed effects. Column 3 excludes political variables and is estimated by OLS, column 4 uses all political and economic variables and is also estimated with an OLS. Column 5 is estimated using state specific fixed effects, but it excludes from the data set, states categorized as ‘special category states.’

The key result from table 1 is that in each case we find a negative and statistically significant relation between the political alignment variable and the release of resources from the national calamity contingency fund. To put this into perspective, political alignment reduces the release of resources from the national calamity contingency fund by 38%.

Table 1: Correlates of Resources Released from the NCCF

Variable	(1)	(2)	(3)	(4)	(5)
Net State Domestic Product		2.71e-06 (1.37)		3.17e-06 (2.21)	3.11e-06 (1.56)
Primary Deficit		0.00009 (1.64)		0.00007 (1.23)	0.00011 (1.9)
Release from Calamity Relief Fund	0.0038 (2.31)	0.0015 (0.74)	0.0070 (5.26)	0.0037 (2.28)	0.00068 (0.31)
Coalition Dummy	-0.33 (-1.31)	-0.38 (-1.52)	-0.088 (-0.34)	-0.18 (-0.74)	-0.389 (-1.30)
Election Year	0.63 (0.20)	-0.0045 (-0.01)		-0.142 (-0.41)	0.039 (0.11)
Constant	3.74 (13.77)	3.54 (12.56)	3.28 (13.13)	3.21 (13.32)	3.80 (10.55)
R2	.14	.22	.15	.21	.14
No. Of States	21	21	21	21	14
State Fixed Effects	Yes	Yes	No	No	Yes

Notes: t-statistics are reported in parentheses. For FE overall R^2 is reported and for OLS the adjusted R^2 is reported.

These results seem to suggest that the central government releases larger resources from the national calamity contingency fund for states not politically aligned with it. Contrary to the results of Rao and Singh (2003) who find that political alignment always has a positive and significant effect on grants to state plan schemes, political alignment is negatively associated with discretionary transfers in the context of natural disasters. While the results might seem appealing from a development perspective, a public choice interpretation is warranted. Having controlled for resources released from the calamity relief fund, which roughly proxy the scale of relief necessitated, a larger flow of discretionary resources to non-politically aligned states may suggest central government efforts to garner greater political support for its coalition from opposing fractions, or simply make allies to call upon, in the event of a turbulence within the coalition. For

example in the event of a 'vote of no confidence' in the parliament, the Prime Minister is required to prove majority usually within a fortnight. India has a particularly bad track record with the 'no-confidence motion'. Three of India's ruling coalitions lost office because of votes of no confidence. Our results might also suggest central government efforts to 'buy votes' for its coalition members through generous spending on disaster relief. This interpretation seems consistent with the 'vote buying' hypothesis put forth by political scientists, and the empirical evidence collected by Chen (2004) on the pattern of FEMA spending following the Florida hurricane of 2004.

A second possible interpretation of our results, consistent with the finding of Rao and Singh (2003) might suggest that the central government uses 'other resources', different from the national calamity contingency fund, for redistribution to coalition members. Natural disasters and government relief efforts receive a lot of attention in the media. Resources flowing to political allies over and above those released from the calamity relief fund are likely to be scrutinized by the media, and also by the opposition in the parliament. This interpretation is consistent with the conclusions of Besley and Burgess (2002), who argue that a strong media presence in India, make the governments more responsive and accountable.

Finally, while every effort has been made to ensure the quality of data in our analysis, inconsistencies or errors in reporting data on natural disasters and some missing observations may have adversely affected our results.

IX. Conclusion

Political actors respond to incentives they face. Within the context of coalition governments this would imply a redistribution of resources, favoring coalition members for retaining coalition stability and member support. Most empirical evidence supports this line of argument for non-discretionary and rule based transfers.

We test for the redistribution hypothesis by focusing on a discretionary element of intergovernmental transfers, the National Calamity Contingency Fund. We find that coalition governments do not use discretionary transfers for redistribution to members. In fact coalitions use discretionary spending in states, which are politically unaligned with the coalition. Though counter intuitive, these results highlight previously undocumented characteristics of coalition politics. One possible interpretation is that by spending on unaligned states, the ruling political coalition is attempting to improve the electoral support for member parties or political support for the coalition. This follows from the idea that the right to win in most political situations is defined in terms of the contestant's resource base. Alternatively, in the context of disaster relief spending, where the media and political opposition closely scrutinize government actions, such a strategy might be politically most feasible.

Future research should isolate other discretionary elements in intergovernmental transfers to determine whether our results have ubiquitous validity, or whether disaster relief spending is an outlier. This will have strong policy implications for disaster relief, especially in the context of coalition governments – a trend, which is now synonymous with Indian politics.

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Appendix 1. Data description and sources

Variable	Description	Source
<i>National Calamity Contingency Fund (NCCF)</i>	Resources released to the state governments by the central government from the NCCF in ten million Indian Rupees.	National Institute of Public Finance & Policy (NIPFP), Lok Sabha unstarred questions and www.indiastat.com
<i>Net State Domestic Product at Current Prices (NSDP)</i>	Value of the Net State Domestic Product at Current Prices for each Indian state (base year 1992-93), measured in ten million Indian Rupees.	Handbook of Statistics on the Indian Economy published by the Reserve Bank of India.
<i>Primary Deficit (PD)</i>	Measures the Primary Budget Deficit for each state (lagged by one year) in ten million Indian Rupees	Handbook of Statistics on the Indian Economy, Published by the Reserve Bank of India
Release from Calamity Relief Fund (CRF)	Resources released from the formula based – Calamity Relief Fund to the Indian states by the central government. Measured in ten million Indian Rupees.	Handbook of Statistics on the Indian Economy, Published by the Reserve Bank of India, Besley & Burgess (2002),
<i>Election Year (elec)</i>	Dummy variable for whether the state went to vote that year (for the state assembly elections).	Election Commission of India
<i>Coalition</i>	Dummy Variable indicating whether the state Chief Minister's political party was also a member of the ruling coalition at the center.	Election Commission of India, Besley & Burgess (2002)