Coalition Governments and Policy Distortions : The Indian Experience   Bhaskar Dutta

I. INTRODUCTION

M uch of the recent policy discussion in India implicitly assumes a framework in which a benevolent government or social planner will optimally choose policy instruments in order to maximise the welfare of the representative individual, with the availability of resources posing as the main constraint. This *normative* view of government behaviour is, of course, an important tool of analysis. However, it can often be a sterile exercise if it ignores completely the institutional constraints and rigidities in which policy-making occurs. The presence of these constraints makes it important to analyse the *positive* theory of government behaviour, or in other words to explore what governments actually do.

The recent *public choice* literature discusses various political features which crucially influence government behaviour, and which drive a wedge between what governments *actually* do and what they are *advised* to do by economists. Typically, political power is dispersed, either across different wings of the government, or amongst political parties in a coalition, or across parties that alternate in power through the medium of elections. The desire to concentrate or hold on to power can result in inefficient economic policies.

For instance, lobbying by various interest groups together with the ruling party's wish to remain in power often results in policy distortions being exchanged for electoral support.[1] Several papers also emphasise the presence of *political cycles* in economic policy formulation. In the aptly named *opportunistic* models, policymakers are interested solely in maximising their probability of surviving in office, so that the resulting

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[1] See Bardhan (1984) for an illuminating account of this process in the Indian context.

character of government is very far away from the benevolence assumed by more traditional normative theories of government behaviour.[2] In contrast to opportunistic models, *partisan* models specify that political parties are almost exclusively concerned with furthering the interests of their *own* support groups[3]. Again, the conclusions which follow from this class of models are very different from the *benevolent government* models.

In this paper, I focus on *government instability*, which can be another cause of economic distortions, and is also of particular relevance in India today. Unstable coalitions or governments that are not likely to remain in power for an extended period of time are liable to introduce policy distortions for at least two reasons. First, such governments obviously have very short time-horizons. This has important implications for economic policy in general and budgetary policy in particular. If political power alternates rapidly and randomly between competing political parties or groups of parties, then each government will follow *myopic* policies since it assigns a low probability to being relocated. Hard policy options whose benefits flow after a long gestation lag are unlikely to be adopted by such a government. Instead, it may spend indiscriminately in order to satisfy the short-term needs of its support groups. This will result in a legacy of high debt to its successor. Although this may constrain the actions of the next government, the current government does not care about the priorities of the next government.[4]

The second route through which the rapid turnover of governments may induce policy distortions is relevant in the case of coalition governments. The shorter is the expected duration of such governments, the more difficult it will be for the members of the ruling coalition to agree on policies. Of course, the more heterogeneous the parties in the ruling coalition, the greater will be the lack of co-operation. Each party in the ruling coalition may then try to promote populist policies in order to exploit its own narrow interests. The most likely casualty of all this will be fiscal discipline since government expenditure will be excessive.[5]

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[2] Nordhaus (1975) was amongst the first to develop this class of political cycle models.
[3] See Alesina (1987).
[4] Alesina and Tabellini (1990) construct a model along these lines.
[5] Roubini and Sachs (1989) analyse the pattern of fiscal deficits in OECD countries. They find a clear tendency for larger deficits in countries characterised by short average tenure of government and by the presence of many political parties in a ruling coalition.

Of course, *all* coalitions are not unstable. For instance, the Left Front government in West Bengal has been one of the most stable governments in India, and has been in office for almost *four* full terms since 1977. The Left Front again serves as a counter-example to the received wisdom which asserts that the larger the number of parties in the coalition, the more unstable it is likely to be. Similarly, Kerala has witnessed some coalition governments containing a relatively large number of constituent parties. The average duration of these governments has tended to exceed the duration of coalition governments in other states.

This provides the motivation to propose a model of instability of coalitions. Section 2 provides a brief description of the experience of coalition governments in the major states in India. On the basis of this experience, I suggest that the crucial factor determining instability of a coalition is the number of *pivotal* members in the coalition. A constituent member is defined to be pivotal if its departure from the coalition converts the coalition from a *winning* to a *losing* coalition. In order to test the hypothesis that the instability of a coalition increases monotonically with an increase in the number of pivotal members in the coalition, I use data on the *duration* and *nature* of state governments in India after the general elections of 1967. The regression exercise, whose results are reported in section 2, confirms the hypothesis. The exercise also reveals that the presence of *defectors* in a coalition increases instability since defectors are more likely to switch from one party to another. Moreover, governments that are formed from *minority* coalitions with support from individuals or groups from outside also prove to be more fragile.

In view of the principal result in section 2, a coalition is labelled *unstable* if it contains at least *two* pivotal members. In section 3, I examine the pattern of fiscal policies followed by 15 major states between 1967-68 and 1992-93 in order to see whether there are any obvious policy distortions associated with coalition governments in India. Two sets of exercises are carried out. First, the data for all the states are *pooled,* and regressions are run on the pooled data in order to see whether unstable coalition governments are more profligate, are less inclined to raise resources and whether they are more liable to run up revenue deficits.[6] Adjustments are made for factors such as size of the state economy and population by deflating with the state domestic product. Moreover, state-specific factors are

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[6] The dependent variable is taken to be *revenue* deficit rather than the overall deficit since each state has greater control over its revenue deficits. Central largesse (or its absence!) can have an undue influence on a state's overall deficit.

also accommodated by using state dummies. The results show that unstable coalition governments *do* have a *significantly higher* proportion of revenue expenditure to state domestic product, as well as a *significantly lower* proportion of revenue surplus to state domestic product. There is, however, no statistically significant relationship between the prevalence of unstable ruling coalitions and any of the other policy variables.

In the second set of exercises, the relationship between the prevalence of unstable coalition governments and possible policy distortions is tested separately for individual states. The exercise is restricted to states which have had unstable coalition governments for some period in each of at least *four* years[7] (out of the 26 financial years between 1967 and 1993). Although Kerala satisfies this requirement, it was excluded because it has not had *single-party* (or coalitions with one only one pivotal party) in four years. Four other states fit into this category. The regression results show that in two of the four states, revenue expenditure, as a proportion of state domestic product, has been significantly higher in years in which unstable coalitions have been in power. In a couple of states, the state's non-tax revenue as a proportion of state domestic product has been significantly lower during the rule of unstable coalitions.

So, there is some evidence to support the hypothesis that unstable coalition governments are guilty of greater levels of fiscal indiscipline. And, of course, there are other potential costs associated with governmental instability which are not captured in government budgets. For instance, weak governments are unlikely to pass politically unpopular legislation if the benefits cannot be captured immediately. The failure of the present central government to reform labour laws so as to permit firms to restructure their labour force is an obvious example. The huge subsidies on water, food, electricity and urban transport are also symptoms of weak governance.

This raises the obvious question as to whether anything can be done to minimise the possibility of occurrence of unstable coalitions. Section 4 contains some tentative suggestions about reform of the electoral system. In particular, I point out a need to take a second look at the system of the plurality rule. Some form of proportional voting system along with the stipulation that parties must get a minimum percentage of the total valid votes cast in order to gain representation in the legislature may well lead to a distribution of seats in the legislatures which will bring forth more stable governance.

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[7] Of course, the choice of four is arbitrary!

COALITION GOVERNMENTS IN INDIA

The Indian experience with coalition governments started after the elections in 1967, which marked a watershed in Indian politics. The Congress party suffered a sharp setback in both the Parliamentary as well as the state assembly elections, and Opposition parties and coalitions came to power in 6 major states. One consequence of the Congress setback was a vastly different pattern of party representation in many of the state assemblies. There was a marked tendency towards *multipartism* or *fragmentation* of legislatures with a proliferation of small parties and successful Independent candidates. The fragmentation of legislatures has often resulted in loose and unstable alliances since commonality of ideology or purpose is more difficult to ensure amongst a large number of groups.

An early consequence of multipartism was the formation of coalition governments of very short duration. Indeed, between the elections in 1967 and July 1968, as many as 10 governments were formed in the four states of Bihar, Uttar Pradesh, Punjab and West Bengal. The first non-Congress government in Bihar consisted of all the non-Congress parties, but without any Independents. The government lasted barely 11 months before it was brought down by a no-confidence motion. This was replaced by a Minority government. which included *defectors*, and was also dependent on the support of the Congress party. Another government of the same type (Minority government along with defectors) took over before the imposition of President's Rule in June 1968.

A similar pattern was witnessed in Punjab. In Uttar Pradesh, a Congress government was formed immediately after the elections. But, it lasted for less than a month when Charan Singh defected along with several other Congress legislators. The new government formed by Charan Singh himself survived for less than a year, and President's Rule had to be imposed in February 1968. In West Bengal, the so-called United Democratic Front, which was essentially a motley group of almost all the non-Congress parties, managed to stick together for just 8 months. Its successor, a minority government constituted by defectors supported by the Congress party lasted for 3 months.

The Indian electorate's initial experience with coalition governments was not a particularly happy one. This may have been one reason why the pattern of state governments changed in the *seventies* and *eighties*, with single

party governments ruling in almost all states.[8] Although there have been stray cases of coalition governments in some states, Kerala and West Bengal are the only states which have had several spells of coalition governments during this period. Over the last few years, there has again been an increase in the incidence of coalition governments.

Of course, factionalism *within the same party* can be as disruptive as inter-party competition for power. This disruption has taken two forms. First, in several cases, the leader of some faction in the Congress party has walked out of the Congress after being denied the Chief Ministership or enough Cabinet positions for members of his group. This has sometimes precipitated the collapse of Congress governments.[9] Second, and more frequently, it has resulted in a change in the Chief Minister, with the same *party* remaining in power. To the extent that Chief Ministers have to follow the "party line", this is less disruptive as far as policies are concerned. That is why this paper defines a *change* in government to mean a change in terms of the party or parties in power.

In particular, a *government* will be identified with the party (or parties) which constitute the Cabinet.[10] So, when it comes to calculate the *duration* of a government, the following conventions will be adopted:

(a) A change in the Chief Minister does not constitute a change in government unless this is accompanied by a change in the composition of parties supporting the administration.

(b) If a party switches from being a supporter to being an active member (that is joins the Cabinet), then this will be taken to be a new government.

(c) A *new* government will be said to take over after each election, even if the same party or coalition commands majority support.

Of course, this is not the only possible approach. For instance, Brass (1977) adopts a different definition. Brass defines a government as an

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[8] In this analysis, I naturally assume that the Janata party is a single party since its constituent parties formally gave up their individual identities.

[9] For instance, Charan Singh's departure from the Congress in 1967 brought down the government lead by C.B. Gupta.

[10] In the actual measurement of duration of governments, some anomalies crop up. For instance, while heading the government in Haryana, Mr. Bhajan Lal defected en masse and joined the Congress in the mideighties. Although the identity of the government obviously changed, I have *not* treated this as a change in government.

administration whose Chief Minister has been sworn in by the Governor and who remains in office without any inter-election resignation. So, a government which undergoes a formal resignation and a new swearing-in ceremony after an election, but with the same Chief Minister, is counted as a single government. However, if a Chief Minister *resigns* between elections and reconstitutes the government after the elections, then Brass assumes that a change in government has taken place. The principal difference between the definition advocated by Brass and the one adopted here is that Brass identifies a government with its Chief Minister, whereas this paper stresses the identity of the ruling party(s). The identification of governments with parties seems more appropriate since changes in policies are more likely when there is a change in the ruling party or coalition. A second (but less important) difference is that this paper identifies a government with the "current" legislature, since (c) above specifies that the duration of a government ends when a new legislature is formed.

Brass (1977) notes that there is a clear difference in mean duration between single-party governments and coalition governments.[11] His results provide a partial corroboration of the hypothesis relating instability of coalition governments to the degree of fragmentation of legislatures. The greater the extent of fragmentation in the legislature, the more likely is it that a large number of relatively equal-sized parties will bargain with each other to form ruling coalitions. So, this also increases the number of possible ruling coalitions. This, in turn, makes it more likely that a small party or party faction (or perhaps a group of Independent candidates) can defect from one ruling coalition to another, a process which is not unfamiliar in the Indian context. [12] Also, it is likely that the larger the number of equal-sized parties in the legislature, the greater will be the number of parties in the ruling coalition. If parties in the coalition have no ideological affinity to one another (perhaps not a bad assumption in the Indian context), then the possibility of conflicts will increase with the number of such parties.

Despite the plausibility of a positive association between fragmented legislatures and instability of ruling coalitions, the actual *correlation* between the Rae measure of fragmentation (F_R) [13] and duration of coalition

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[11] Brass analyses the duration of coalition governments in Indian states between 1952 and 1977. His analysis involves explanatory variables relating to the structure and composition of the legislature, the structure of parties in the coalition, and the degree of institutionalization of the party system.

[12] Indeed, Brass remarks that coalitions containing Independents and defectors were more unstable.

governments turns out to be low in several empirical studies. [14] This may be because F_R does not capture the *specific* characteristics of fragmentation which influence coalitional instability. As I have remarked earlier, the reason why greater fragmentation causes more instability is that it increases the number of parties in the ruling coalition. However, the correlation between F_R and the number of parties in a ruling coalition may be low.

That is why it may be preferable to use a *direct* approach which is built on the number of parties in the ruling coalition. Define a *winning* coalition to be any group of parties which together commands the support of a majority in the legislature. A coalition T is called a *minimal* winning coalition if T is a winning coalition, and moreover no *proper subset* of T is a winning coalition. So, if T is a minimal winning coalition, then all members of T are *pivotal* in the sense that if any member of T defects, then the remaining subset of T ceases to be a winning coalition. In other words, any pivotal member can bring about the collapse of a government by defecting from the coalition.

Given any coalition T, let p(T) denote the *number* of pivotal members in T. I will also call p(T) the *index of instability* of coalition T. The hypothesis to be tested is that the stability of a ruling coalition T *decreases* with an increase in p(T). This is related, but *distinct*, from the hypothesis which links stability to the number of members in a winning coalition. Obviously, the two hypotheses coincide when T is a minimal winning coalition. However, there are instances where ruling coalitions have not been minimal winning coalitions. For instance, although the Left Front in West Bengal has a large number of parties, the Marxist Communist party, the CPI(M), had an absolute majority of seats in the four elections held since 1977. So, the CPI(M) was the only pivotal member in the Left Front coalition. Hence, the index of instability of the Left Front ministries takes on the value of 1. Parties other than the CPI(M) were relatively powerless because any threats by them to leave the coalition would not bring about a collapse of the government. Obviously, single-party majority governments also have the same index of instability.

In the Left Front coalitions, the CPI(M) held an absolute majority on its own. However, the index of instability of a winning coalition could be *unity* even if no single party in the coalition holds an absolute majority

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[13] F_R was introduced in Rae (1967) and is based on the Herfindahl - Hirschman index of industrial concentration.
[14] Apart from Brass (1977), see also Taylor and Herman (1971).

of the seats. For instance, the ruling coalition which was formed in Kerala immediately after the elections in 1967 contained as many as 6 parties. The major party in the coalition was the CPI(M) with 52 seats in a house of 133 seats. No party other than the CPI(M) was pivotal. Note that the CPI(M) itself did not have a majority of the seats. So, in general, coalitions whose combined seats are well in excess of the threshold needed to constitute a majority in the legislature are relatively immune against defections by small parties in the coalition.

The use of p(T) as an index of instability involves an implicit assumption. It is being assumed that only the threat of *individual* parties to deviate from the ruling coalition need be taken into account. Consider, for instance, the ruling coalition in Kerala after the 1967 elections. As I have pointed out, the CPI(M) was the only pivotal party in that coalition. But, since the CPI(M) was not a majority party on its own, the other parties in the coalition could *combine* and engineer the collapse of the government. And, indeed, this is what happened in 1969 when the CPI, the other Communist party, left the coalition along with some of the other parties and formed a minority government. However, the organization of *joint deviations* involving several parties may be just as unlikely as mutual cooperation in order to sustain a multi-member coalition.[15] Hence, the use of p(T) as an index of instability may not be a bad approximation after all.

Brass (1968, 1977) had earlier commented on the key role of Independents and party defectors in creating instability. Since a defector has switched parties at least once in the past, he or she is more likely to do so again in the future. Hence, coalitions which depend on defectors for survival are liable to be unstable. Brass had also pointed out that the duration of minority governments was less than that of majority governments, although the difference was not significant. The present paper uses the presence of defectors, minority governments and the instability index of the ruling coalition as the principal variables in the analysis of stability of coalition governments.

Table 1 exhibits the frequency distribution of duration of state governments during the period 1967-1995. Majority governments without defectors or those who have not been removed by the central government have been classified according to their index of instability, which is denoted IS in the table. The table does not report the index of stability of Minority

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[15] It is worth pointing out that the CPI(M)-led coalition lasted for 2 years and 7 months before the CPI could organize a successful revolt!

governments or a government containing defectors.

Table 1
Pattern of State Governments

Type of	Duration (in months)					
Govt.	60+	48-59	36-47	24-35	12-23	<12
IS=1	30	17	8	17	9	15
IS=2	1	1	1	1	2	3
IS=3		2			5	2
IS=4	1				1	
IS=5	1				1	6
IS=6+				1		8
D				1	2	7
M				1	2	5
R			2	6	4	3
DM						3
RD						1
RM						1

Note: D refers to government containing or supported by defectors, M refers to a minority government, R refers to a government removed by the Governor (or Central government), while DM refers to a government which is both D and M. RM and RD have similar interpretations.

Of the 96 governments[16] which have an index of instability of 1, as many as 47 survived for 4 years or more. The table also shows that 15 governments with an index of instability of 1 lasted less than 12 months. However, in 8 of these cases, the relatively short duration of the government is partly due to the fact that the government was of the D, M, or R category. The average life of coalition governments clearly decreases with an increase in an increase in IS.[17] It is also noticeable that minority governments as well as those containing defectors have a much shorter life span.

In order to explain the pattern of duration, the following procedure was followed. The duration of different governments was classified into 6-monthly intervals. Let L denote this variable. So, L takes on the value 1 for a government which lasted upto 6 months, 2 for a government which lasted upto 12 months, and so on. Finally, the maximum value of L is 10

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[16] Out of these, 5 are actually coalition governments in West Bengal. The first is the United Front Ministry which was in office between February 1969 and March 1970, while the other four are the Left Front governments since 1977.

[17] An outlier is the instance of the coalition with IS =5 in the 60+ months category. This is the government in Kerala which lasted from march 1971 to April 1977.

for governments whose duration was at least 55 months. The reason for making this transformation is that it is difficult to come up with a model which can distinguish between a government whose duration is (say) 7 months from one whose duration is 8 months. Since Table 1 suggests that IS, D, M and R all have a significant influence on the observed pattern of duration, these are used as explanatory variables. In addition, it is also observed that the average duration of coalition governments in Kerala is longer than that of governments in other states. This observation suggests the use of a dummy for coalition governments in Kerala. Several regressions were run with this set of explanatory variables, using different functional forms. I report below the results of one such exercise.

$$\ln L = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 \qquad (1)$$

Here, x_1 denotes the index of instability of government. x_2 represents the value of $(D+M)$, where D (respectively M) takes on the value 1 if the government contains defectors (respectively is a minority government) and 0 otherwise, while x_3 equals 1 if the government was removed from office by the central government or by the governor, and 0 otherwise. Finally, x_4 is the dummy variable equalling 1 for coalition governments in Kerala, and 0 otherwise. The estimated equation is:

$$\ln L = 2.15 - 0.22\ x_1 - 0.75\ x_2 - 0.59\ x_3 - 0.53\ x_4 \qquad \overline{R}^2 = 0.47 \qquad (2)$$
$$\quad\ (24.9)\ (6.19) \qquad (6.11) \qquad (4.07) \qquad (2.28)$$

The terms in parentheses are the t-values, while $\overline{R}^2$ is adjusted for degrees of freedom. They indicate that all the coefficients are significant. The regression result supports the initial hypothesis regarding the influence of the number of pivotal parties in the ruling coalition on the duration of the coalition since an *increase* in IS *decreases* the life of the coalition. The result also corroborates Brass' earlier observations regarding the relationship between defectors and duration of coalitions.[18] Notice, however, that (2) indicates that once the other factors (that is, IS and the presence or absence of defectors) have been controlled for, there is a *significant* difference between the duration of minority and majority governments. This conclusion is different from the corresponding result of Brass, who did not find any significant difference between the duration of majority and minority governments.

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[18] Note that D and M are statistically significant variables even when they appear separately in the regression equation.

UNSTABLE COALITIONS AND FISCAL POLICIES

In this section, I examine whether unstable ruling coalitions are guilty of fiscal indiscipline.[19] Of course, as I have remarked earlier, fiscal indiscipline is only *one* source of policy distortion associated with coalition governments. It is however an important indicator of the kind of governance associated with different political institutions. Governments which practise fiscal discipline are more likely to adopt policies which bring long-term benefits even if they are politically costly in the short-run.

A conceptual problem in analysing discipline of state governments in India is that the states have less than complete control over their resources. The Constitution classifies the expenditure responsibilities of the central and state governments into three categories. While some are exclusively subject to the jurisdiction of one or the other, others are within the concurrent jurisdiction of both. The Constitution also sets forth the respective taxation powers of the two tiers of government. However, as Bagchi, et.al. (1995) remark, "....states' taxation powers are inadequate in relation to their expenditure responsibilities and this imbalance is growing over time". The Constitution also specifies resource transfers from the centre to the states through various mechanisms. Unfortunately, the centre has often been accused of manipulating tax rates to its own advantage. The importance of discretionary grants to states has also been growing over time. Moreover, successive central governments have been accused of bias in the dispensation of such grants.

In order to mitigate the effects of the states' dependence on the centre as far as possible, the paper focuses on variables such as *revenue expenditure, own tax revenue, own non-tax revenue* and *surplus (or deficit) in the revenue budget*. It can be argued that these are variables over which the state governments have relatively greater control, subject to the constraints imposed by the Constitution. Certainly, there are no *legal* barriers in increasing non-tax revenues by raising charges for services provided by the state. The wide variation in tax effort (measured by ratio of own tax revenue to state domestic product) amongst states implies that some states are more efficient in raising resources than others, although all states face similar constraints in so far as powers of taxation are concerned. If states can differ in tax effort, then it is possible that differentials in tax effort are partially explained by factors such as the nature of the government.

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[19] An early contribution on the impact of political factors on fiscal policies of different state governments is Govinda Rao (1979).

A question may be raised about the extent of control exercised by the *current* state government over the level of its revenue expenditure. This is because the current state government "inherits" some items of expenditure which are obligatory. For instance, centrally-sponsored schemes have become an increasingly important source of funding for the states, but the subsequent recurrent expenditure has to be borne by the states. Similarly, the payment due to debt servicing, which has been growing in magnitude, is obviously an item of committed expenditure. However, there is no reason to believe that there is any systematic relationship between the ratio of committed expenditures to total revenue expenditure and the *type* of state governments. So, any possible result on excessive revenue expenditure by unstable coalition governments need not be biased on this account.

In order to neutralise the effects of factors such as size of population and state income, all the variables of interest are deflated by the state domestic product (SDP). I denote by E, T, N, and S the ratios of revenue expenditure, own tax revenue, own non-tax revenue and surplus in the revenue budget respectively, to the SDP. Data on these variables is used for each of the 26 financial years between 1967-68 to 1992-93, and for all the 15 major states which are listed in the Appendix.

Since the main purpose is to analyze whether unstable ruling coalitions have any effect on the levels of E, T, N and S, I need to find a proxy for the type of government in a state in each financial year. Of course, there have been many instances in which the type of government has changed midway through the year. The following procedure was adopted. A dummy variable, denoted c, was used to represent the presence or absence of unstable ruling coalitions during any year in any particular state. The variable c is defined to take the value of *one* if there was an unstable coalition (that is, one with *at least two pivotal parties*) for at least *two months* of the relevant (financial) year and relevant state, and *zero* otherwise. An alternative procedure which was used only for a couple of individual states looks at the IS-values of all governments which have been in office for at least two months in a financial year, and then picks the *maximum* IS-value from this list. Of course, the cut-off mark of two months as well as the choice of the maximum IS-value are necessarily ad hoc and arbitrary.

There are some states which have not had *any* experience of coalition governments. Some of the other states have had coalition governments on a couple of occasions. Due to insufficient variation in the values of the

explanatory variable, the impact of coalition governments on fiscal policy was not estimated *separately* for these states.[20] However, in order to include *all* experiences with coalition governments, the data for all the 15 states and 26 years was *pooled*. Regressions were run on the pooled data in order to see whether unstable coalitions have any significant effect on any of the fiscal variables of interest. Not surprisingly, there was significant *time trend* in all the variables. Thus, the basic equation estimated on the pooled data was:

$$y = \alpha + \beta \ln t + \gamma c \tag{3}$$

where y denotes the values of the dependent variable (E, T, N or S) , while c is the dummy for type of government. An alternative specification (used for S) was :

$$S = \alpha + \beta_1 t + \beta_2 t^2 + \gamma c \tag{3'}$$

The basic equation was modified in order to allow for inter-state differences. To accommodate differences in state intercepts, equation (3) is modified to :

$$y = \alpha + \Sigma_j \alpha_j x_j + \beta \ln t + \gamma c \tag{4}$$

where x_j (j = 1, 2,...,14) takes value *one* for state j and *zero* for all states other than j.[21] So, $(\alpha + \alpha_j)$ is the intercept for state j , j not being West Bengal, whose intercept term is just α. A corresponding modification was made to equation (3μ).

In order to allow differences in both state intercepts and state slopes, the estimated equation was :

$$y = \alpha + \Sigma_j \alpha_j x_j + \beta \ln t + \Sigma_j \beta_j z_j + \gamma c \tag{5}$$

where x_j as in equation (4), while z_j (j = 1, 2,...,14) takes value ln t for state j and zero otherwise. Again, West Bengal is taken to be the reference state, so that the slope for West Bengal is β, while it is $(\beta + \beta_j)$ for state j.

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[20] In the case of Kerala, there was a converse problem since there were only a couple of years in which Kerala had a government with only one pivotal party!

[21] Since data for 15 states is being pooled, only 14 dummies are necessary. West Bengal was taken to be the "reference" state.

The states of Bihar, Orissa, Punjab and Uttar Pradesh are of particular interest because they have experienced *both* unstable coalition governments and single-party (or stable coalition) governments in several years. Separate regressions were run for each of these states, using some version of equation (3).

Table 2
Regression Results (All States Pooled)

Dependent Variable	Explanatory Variables						
	Constant	t	t^2	$ln\ t$	c	n_t	R^2
S	-1.82	0.34*	-0.01*		-0.16	9	0.40
	(5.74)	(9.40)	(11.22)		(0.74)		
E	3.82			3.54*	1.14*	10	0.69
	(6.85)			(25.31)	(2.83)		
ln T	1.13			0.25*	0.002	7	0.86
	(34.57)			(30.33)	(0.11)		
ln N	-0.20	0.12*			-0.13*	14	0.52
	(2.65)	(8.68)			(2.24)		

Note: (i) n_t refers to the number of state intercepts which are significant at the .01 level in the regression equation.

    (ii) * indicates significance at the .01 level.

    (iii) terms in parentheses are the t values.

The results of the regressions on the pooled data are given in Table 2.[22] The most interesting feature of the regression exercise is the evidence that unstable coalitions *do* have significantly higher levels of revenue expenditure than other types of government. This corroborates the basic hypothesis that unstable ruling coalitions will tend to overspend since they have relatively short time horizons. There is also support of the hypothesis that unstable coalitions are not very enthusiastic about raising nontax revenues. Notice that the coefficient of c in the regression equation for N is negative and significant. But, the type of government does not seem to have any influence on tax effort. It is also apparent that the explanatory power of the regression model is low as far as S is concerned. An explanation for this phenomenon could be that transfers received from the central government have some influence on the state's size of revenue surplus or deficit. Since the size of these transfers have nothing to do with whether a particular state government is an unstable coalition or not, it is not surprising that the index of instability of the government does not have a significant influence on the size of revenue surplus.

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[22] The introduction of dummies to accommodate differences in state slopes makes only marginal differences in the estimated equations. So, Table 2 only reports values corresponding to equation (4).

Tables 3-5 describe the regression results for the states of Bihar, Uttar Pradesh and Punjab. The results for Orissa are not reported here since the explanatory power of the regression equations was uniformly poor. A possible reason for this may lie in the fact that the pattern of governance in Orissa has been slightly different. The election in 1967 brought the coalition of the Swatantra and the Jana Congress into office. Unlike the coalitions in other states, the coalition in Orissa demonstrated remarkable stability, continuing in office for almost 4 years. After a brief spell of President's Rule, another coalition succeeded the Swatantra-Jana Congress coalition, but lasted for slightly over a year. There were also a couple of spells of minority governments in Orissa during the seventies.

Bihar and Uttar Pradesh are two states which have had long experience of coalition governments. In both states, various coalition governments were in power between 1967-68 and 1971-72. There were also several spells of President's Rule during this period. Single-party majority governments were in office between 1972-73 and 1989-90. Finally, both states elected coalition governments to power. Several coalition governments have been in power in Punjab, but only during the first four years.

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Table 3

Regression Results (Bihar)

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Dependent Variable	Explanatory Variables					
	Constant	$\ln t$	t	c	IS	R^2
S	2.85	-0.60		-3.18*		0.53
		(1.77)		(5.28)		
E	-0.47	5.51*		4.86*		0.85
		(11.94)		(5.92)		
E	-1.98	5.88*			0.86*	0.77
		(9.08)			(3.94)	
ln T	1.07	0.16*		0.05		0.74
		(8.23)		(1.54)		
ln N	-0.05		0.06*	-0.30*		0.81
			(9.33)	(2.90)		

Note : * indicates that coefficient is significant at the .01 level.

The strongest corroboration of the basic hypothesis is provided by Bihar. Unstable coalition governments have incurred a *significantly* higher revenue expenditure, a result which is consistent with that obtained in the regression exercise with the pooled data. Most interestingly, the *index of instability* also has a significant influence on revenue expenditure. In other words, the more unstable the ruling coalition (that is, the larger the number of pivotal parties) the greater is the proclivity for excessive expenditure!

Table 3 also shows that unstable coalitions collect a smaller volume of non-tax revenues. The strength of the relationship between unstable ruling coalitions and fiscal indiscipline is strong enough to carry over to the case of S - it turns out that unstable ruling coalitions also have a lower surplus (or larger deficit) in their revenue budgets. Notice, however, that unstable coalitions *do not* have lower tax effort.

Table 4
Regression Results (Punjab)

Dependent Variable	Explanatory Variables				
	Constant	ln t	t	c	R^2
E	2.76	3.65*		2.84	0.58
		(4.59)		(1.57)	
Ln T	1.40	0.23*		0.14*	0.85
		(8.89)		(2.33)	
S	3.34		-0.20	-1.85*	0.52
			(5.18)	(2.27)	

Note : * indicates that coefficient is significant at the .01 level.

Table 5
Regression Results (Uttar Pradesh)

Dependent Variable	Explanatory Variables				
	Constant	ln t	t	c	R^2
E	2.35	4.27*		2.72*	0.87
		(12.91)		(4.43)	
ln T	0.94	0.26*		0.05	0.79
		(9.88)		(1.08)	
S	1.95		-0.10	-1.27**	0.52
			(3.47)	(2.68)	
ln N	0.87		-0.02*	-0.13**	0.42
			(4.30)	(2.01)	

Note :   * indicates that coefficient is significant at the .01 level.
          ** indicates significance at the .05 level.

The results for Uttar Pradesh are qualitatively similar to that of Bihar, the only difference being that the *index of instability* of ruling coalitions has no significant influence on any of the fiscal variables. Thus, unstable coalitions have higher revenue expenditure, collect a smaller volume of non-tax revenues, and have lower surplus in the revenue budget. However, Punjab follows a somewhat different pattern. Here, tax effort is significantly *higher*, although the revenue surplus is lower under unstable ruling coalitions.

ELECTORAL SYSTEMS, FRAGMENTED LEGISLATURES AND UNSTABLE GOVERNMENTS

The preceding discussion suggests that unstable ruling coalitions do induce policy distortions. Analysis of the duration of different types of governments suggests that government instability is more likely to prevail in fragmented legislatures since the latter are unlikely to produce majority governments. Since the pattern of representation in legislatures is an outcome of the electoral system, there is a clear need to take a close look at different electoral systems.

Conventional wisdom amongst political scientists suggests that *plurality rule* is most likely to produce majority governments. Indeed, the so-called *Duverger's Law* states that single-member district electoral systems in which winners are decided by simple plurality, the system prevalent in India, is most likely to produce *two-party* systems. Unfortunately, Indian electoral experience does not fit this general pattern. Legislatures are increasingly fragmented, and the explosion in the number of small parties and Independent members increases the probability of unstable coalitions.

An alternative to the plurality rule is the family of *Proportional Representation* (PR) systems. PR systems are used in different countries. The *unmodified* PR system is considered to be more *favourable* to small parties and minority groups, thus increasing the tendency towards fragmentation. However, the PR system can be modified by specifying that only parties which get (say) 5% of the total valid votes cast in all the constituencies can get representation in the legislature. Since this restriction will immediately eliminate all Independent candidates and most of the smaller parties, there is no a priori reason to expect the modified PR system to result in a more fragmentation legislature.

Simulation exercises were carried out in Dutta (1995) to compare the *actual* pattern of representation in state legislatures with the hypothetical pattern which would result if the plurality rule had been replaced by a member of the PR system based on the *Droop* quota, *and if the pattern of voting had remained unchanged.* Of course, any change in the electoral system would have resulted in different responses from both parties as well as voters. So, the hypothetical representation produced by the PR system is an *approximation* to the pattern of representation which would have resulted if Indian states had actually used this system. Nevertheless, some regularities revealed by the simulation exercise are quite interesting.

The particular member of the PR family which was compared to the plurality rule in the simulation exercise is the "largest remainders" formula using the *Droop quota*. As in all quota systems, the first step is to calculate a quota of votes that entitles parties to a seat. A party gets as many seats as it has quotas of votes. Any seats which remain after all full quotas are exhausted are given to those parties having the largest numbers of unused votes. The Droop quota divides the total number of valid votes by the number of seats plus one. So, it is represented by $Q_D = V/(n+1)$, where Q_D is the Droop quota, V is the total number of valid votes cast, and n is the number of seats to be allotted.

The "inputs" into the simulation exercise were the aggregate vote shares of the different parties in 12 major states between 1967 and 1992. While Dutta (1995) compared various characteristics of the pattern of representation in these state legislatures, I will report here only the results about the number of pivotal parties in ruling coalitions.

The focus of attention here is on the stability of *legislatures*. In other words, the principal objective is to evolve a measure which will enable one to judge the potential of any particular legislature to produce stable governments. The approach taken here is based on calculating the number of pivotal members in a coalition which is *likely to form*. In order to do this, some assumption has to be made about what sets of parties would actually have formed alliances. This involves the specification of a set of *permissible* coalitions. I have assumed here that the SSP, BJS and its later reincarnation the BJP, CPIM, Swatantra and the Congress (O) would not form an alliance with the Congress. I have chosen this specification because these are the national parties which have *never* joined a coalition government with the Congress in any state. Hence, a permissible coalition cannot contain the Congress along with any of these parties. Having specified the set of permissible coalitions, the index of instability (IS) of the legislature is taken to be the *minimum* number of pivotal members amongst the set of permissible coalitions.

Tables 6 and 7 give the values of IS under plurality rule and *the PR rule where parties obtaining less than 5% of the total votes cast are denied representation*. The tables show that there is no reason to believe that plurality rule leads to a higher degree of stability in comparison to proportional rule. In several states and at different points of time, the simulated value of IS has been lower than the actual value. Table 8, which shows the *differences* in the two sets of values, exhibits a clear pattern. The actual level of IS is lower than the simulated level *only* in legislatures

which had a majority party under the plurality rule, and where the use of the proportional rule would have resulted in the absence of a majority party. Correspondingly, in legislatures where the value of IS was high under the plurality rule, the proportional rule would have produced a more stable legislature. This is because legislatures with a high value of IS have a relatively large number of parties even in the smallest permissible winning coalition. This implies the presence of several small parties. The proportional rule with the 5% cut-off mark essentially eliminates the smaller parties, thereby producing a higher level of stability according to IS.

Table 6
Values Of IS Under Plurality Rule
(District Magnitude = Entire State)

	I	II	III	IV	V	VI	VII	VIII
AS	1	1	2	1	1	1		
AP	1	1	1	1	1	1		
BIH	3	3	1	1	1	1	3	
GUJ	1	1	6	1	1	2		
HAR	1	1	1	1	2	1	1	
KAR	1	1	1	2	1	1		
MAH	1	1	2	1	1	2		
MP	1	1	1	1	1	1		
OR	2	3	2	1	1	1	1	
PUN	2	3	1	1	1	1	1	
RAJ	4	1	1	1	1	2		
UP	3	2	1	1	1	1	2	1

Note: The periods refer to the successive rounds of elections held in the various states between 1967 and 1992.

Table 7
Values Of IS Under Proportional Rule
(District Magnitude = Entire State)

	I	II	III	IV	V	VI	VII	VIII
AS	1	1	2	1	1	2		
AP	1	1	2	1	1	1		
BIH	2	2	3	1	2	1	2	
GUJ	1	1	2	1	1	2		
HAR	1	1	1	1	1	1	2	
KAR	1	1	2	2	1	1		
MAH	1	1	2	1	1	2		
MP	1	1	1	1	1	1		
OR	2	2	2	1	1	1	1	
PUN	1	1	1	2	1	2	1	
RAJ	1	1	1	1	1	2		
UP	1	2	2	1	1	1	2	2

NOTE : The periods refer to the successive rounds of elections held in the various states between 1967 and 1992.

Table 8
Difference In Actual and Simulated Values of IS
(District Magnitude = Entire State)

	I	II	III	IV	V	VI	VII	VIII
AS	0	0	0	0	0	1		
AP	0	0	1	0	0	0		
BIH	-1	-1	2	0	1	0	-1	
GUJ	0	0	-4	0	0	0		
HAR	0	0	0	0	-1	0	1	
KAR	0	0	0	1	0	0		
MAH	0	0	0	0	0	0		
MP	0	0	0	0	0	0		
OR	0	-1	0	0	0	0	0	
PUN	-1	-2	0	1	0	1	0	
RAJ	-3	0	0	0	0	0		
UP	-2	0	1	0	0	0	0	1

Note: A negative number indicates that the actual stability of the legislature is *less* than the stimulated stability.

This pattern suggests that PR system may produce more stable ruling coalitions in situations where the plurality rule is unlikely to produce majority governments. Since this situation seems to conform to the ground realities of the current Indian situation, the properties of the PR systems (relevant in the Indian context) should be studied more carefully.

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List of States

Andhra Pradesh (AP)   Maharashtra (MAH)

Assam (AS)   Orissa (OR)

Bihar (BIH)   Punjab (PUN)

Gujarat (GUJ)   Rajasthan (RAJ)

Haryana (HAR)   Tamil Nadu (TN)

Karnataka (KAR)   Uttar Pradesh (UP)

Kerala (KER)   West Bengal (WB)

Madhya Pradesh (MP)