The Use of Socio-Economic Criteria for Intergovernmental Transfers: The Case of India

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1. INTRODUCTION

The design of intergovernmental transfers is an important issue in federal countries not only because the sub-national governments often depend on these to maintain their supply of public services, but also because the various elements of the determination of transfers may have incentive effects for the sub-national governments. These may not be taken into account fully while designing the transfers and may thus have unintended effects.

The reasons for intergovernmental grants are similar across nations, although the actual applicability of and emphasis on each of these reasons may vary with the way public finances are organized in particular cases.[1] As several reviews of intergovernmental transfers point out, there are six basic reasons: ameliorating vertical imbalance, reducing horizontal imbalance, correcting for inter-jurisdictional spillovers, ensuring minimum standards of basic services, paying for agency functions undertaken by sub-national governments and returning revenues to lower level governments as a part of a tax-rental arrangement. Clearly, an evaluation of a transfer system – or an element thereof – requires an understanding of the objective(s) involved and an assessment of the extent to which the objective is met. Additionally, there are some desirable features that the transfer system should have, mainly arising from efficiency considerations, but also to ensure that the system meets the relevant objectives in practice. These include adequacy, regularity, transparency and feasibility; it is possible to add to these.[2] An overarching consideration is that of the incentives built into the system: the safest system from this point of view would be one that based transfers on variables completely outside the control of the recipient governments.

In this paper, we examine the transfer system that operates in India through the institution of the Finance Commission (which implies that plan transfers and discretionary transfers

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[1] For example, the issue of vertical imbalance may be irrelevant in a country where revenue handles are equally distributed among different tiers of government.

[2] More often than not, the desirability of a feature depends on the perspective of the reviewer and the specific context. It should be made clear that our vantage point is that of the states, given the Indian context of a 'quasi-federal' structure.

are excluded from its scope). The focus is on an evaluation of the need, appropriateness and manner of use of various socio-economic criteria in the design of transfers mandated by the Finance Commissions over the years, placing them in the context of international experience.

2. WHY USE INDICATORS AT ALL?

To start a discussion of the indicators used in the Indian intergovernmental transfer schemes, one must begin with the need for formula-based transfers that necessitate the use of the indicators. After all, not every nation with multi-tier governmental structure uses them. One alternative that we are inclined to dismiss summarily is a system comprising solely of discretionary or bargain-based transfers. While such transfers do exist in some countries including India, they are never the only type of transfer, nor are they 'good', in that they severely affect the autonomy of the states, are uncertain and can be completely inequitable. A more serious alternative, and actually an appropriate one in our view, would be a system based completely on normative assessments of revenue and expenditures, with transfers filling up the normative deficits. In case transferable resources fall short of the total of the normative deficits, a proportional adjustment can easily be made. This, in essence, is the system used in Australia.

The reasons for our preference for such a system, of course, is that it combines equity considerations with those of efficiency in the best possible manner. The critics of the gap-filling approach used in India earlier have discussed this issue at great length, which need not be repeated. In fact, probably in response to these criticisms, the terms of reference for the Ninth Finance Commission explicitly advocated a normative approach for the distribution of deficit grants. An attempt was duly made to use this approach, but in the end, the bottom lines were not really affected very much by the approach because (a) formula-based tax devolution as a first step took a large number of states out of the ambit of deficit grants, (b) the normative estimates were diluted ostensibly to make the transition easier and (c) substantial grants for 'special purposes' ruined any objectivity that the system might have had. It also clearly lacked transparency, as the critical chorus of state government officials about not understanding the system, during the working of the Commission and immediately after the report was submitted, showed.[3] Arguably, the understanding of the normative approach has improved since then.

It should be noted here that the use of normative approach does not rule out the use of indicators altogether, but only the direct use in computing amounts of transfers. For example, normative assessment of, say, health expenditures in various states can be done on the basis of an econometric exercise using a number of health status indicators and indicators of 'cost disabilities'. But this example also serves to illustrate why complete reliance on the normative approach has not found widespread favour in India. The data requirements for such an approach is large, as respectable normative assessments can

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[3] The Indian case is not unique; even after several years of the operation of a system based on detailed normative assessment, similar reactions are regularly heard in Australia too, and several suggestions to dilute this approach have been made (Grewal, 1999). The main question is: should one throw out the baby with the bath water, or should a simpler and more transparent method for normative assessment be devised?

only be done in a disaggregated framework. It also requires quite a bit of work, which in turn requires more time for the Finance Commission to complete its job than they normally have; in fact, a permanent institution like the Commonwealth Grants Commission is the logical complement of a system based completely on normative assessments.

How does one rationalize a transfer system based on indicators then? For us, distribution formulae using such indicators would be only an approximation of a full-blown normative assessment, perhaps with a greater degree of transparency. To put it in another way, a formula based on socio-economic indicators may be interpreted as the reduced form of a set of structural equations. If normative expenditure in state i (E_i^*) is a function of a set of variables X_{ij} just as revenue capacity (R_i^*) is a function of a similar set of variables Y_{im}, and the two sets of variables X_{ij} and Y_{im} are determined by a single set of exogenous variables Z_{ik} (the second subscript is different to indicate that the number of determinants need not be the same as for either expenditures or revenue), then it can be seen that the difference between normative revenues and expenditures can be expressed as a function of Z_{ik}. This third set of exogenous variables may or may not contain variables from X_{ij} and Y_{im}. Then, transfers based on normative deficits should be linked to Z_{ik} in the reduced form. When k is small and the variables are easy to understand, a formula driven transfer system will be both efficient and transparent.

3. TAKING INTO ACCOUNT VERTICAL AND HORIZONTAL IMBALANCE

The first issue relating to imbalances that needs reflection is that of considering the objectives of vertical and horizontal balance separately. It is possible to argue that in the context of individual states, both are reflected in a single indicator, the normative deficit. In such a case, if the distribution formula is implicitly based on normative deficit, then why should one bother to consider them separately? In fact, transfer systems such as the Australian one do not, and are probably correct in doing so. But as we shall see below, this is not necessarily true of all formula-driven transfer that may be implicitly based on normative deficits.

A formula-driven system of transfers, even when implicitly based on normative deficits, does not necessarily cover the entire normative deficit and may even overcompensate. This is simply because normative deficits are not known in such a system; precisely because they are not known that an approximating formula is required. It follows that if a relatively better-off state, which may only have a small imbalance, is overcompensated, it would mean that that state is getting more than what it should get to cover its share of vertical imbalance while it should not be entitled to any transfer based on horizontal imbalance at all. There would then necessarily be some other state that would get less than its due unless the total distributable kitty is larger than what it ought to be. In the latter case, the system would be inefficient, as it would use up more funds than strictly required, and would be particularly inappropriate when the grantor government is itself in deficit. The seriousness of this problem varies with the way the formula is applied. The system can conceptually provide for both positive and negative grants for individual states. Germany is one example of such a system, but it is in fact rare. In such a system,

the problem of overcompensation would not exist, and the negative transfers would be fully attributable to equalization, i.e., promoting horizontal equity. Another system would be of positive transfers up to a point (the norm), and states above that level receive zero transfer. The Canadian system, and the Indian system of deficit grants would be examples of this. Even here, the overcompensation problem is not present unless there are other elements of the transfer system that cause the outcome to be different (as in India). The problem would however, be serious if all states necessarily received positive amounts, as in the case of tax sharing in India, quantitatively far more significant than deficit grants.

Vertical imbalance is by definition a concept that is applicable to a particular level of sub-national units as a whole, and allocating the overall imbalance among individual units is not conceptually easy. When the transfer system has to be designed on the basis of available information on budgetary outcomes that mix up vertical and horizontal imbalance (*and* possibly some amount of fiscal sloth and/or inefficiency), perhaps the best way of conceptually separating them out is to think of vertical imbalance as a fixed amount equal to the normative deficit of the state with the smallest such deficit, for each of the sub-national units (Bird and Smart, 2002).[4] After taking care of the vertical imbalance in this fashion,[5] the remaining deficits can then be ascribed to horizontal imbalance and dealt with in an appropriate manner. Thus, any system that has an element of a small amount of equal transfer for all recipient units, normalized for the size of the individual units, could be said to have dealt with vertical imbalance, at least approximately. Clearly, one does not need any indicator or formula for achieving this; a rough idea of the smallest normative deficit would be enough.

If normative deficits are not being assessed and covered, then it is equalization where the role of a formula and indicators becomes important. This is actually the case in several federal systems, where the explicit objective of using a formula is equalization (e.g., Canada, Germany, U.K., Nigeria and South Africa). India is an odd case where normative assessments are made and used for one type of transfers, but without any explicit articulation of the objective (except in recent reports of FCs), an equalization type formula is being used for another (fiscally more significant) type of transfer as well. It must be pointed out that the appropriateness of a formula or the constituent criteria thereof depends heavily on the type of transfer instrument and the objectives sought to be achieved.

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[4] While no explanation is provided in the reference cited, the obvious reasoning is to accept the deficit of the unit making the best use of available revenue handles, given the expenditure needs, as arising purely from a mismatch of the revenue handles and the spending responsibilities, in other words, vertical imbalance and generalizing it to all units having the same revenue powers and spending responsibilities.

[5] Yilmaz and Bindebir (2003) feel that it is nearly impossible to eliminate vertical imbalance totally, and cite international evidence to assert that in their examination of 20 nations, only two – Israel and the Czech Republic – succeeded in eliminating it. The flaw in their assertion, of course, lies in confusing actual deficits with vertical imbalance, something they caution against in the same paper.

4. EVOLUTION OF THE INDIAN TRANSFER SYSTEM

The ambivalence characterizing the Indian system is noticeable from the way the relevant constitutional provisions and the distribution formula have evolved over the years. We briefly summarize this process in this section[6] and then proceed to a discussion of the various criteria in the next.

The statutory transfers in India consisted of three different parts to begin with, income tax sharing, excise duty sharing and the grants-in-aid. While the grants are clearly meant for enhancement of fiscal capacity, the constitution does not spell out the objective(s) of tax sharing. The three-way transfer system follows faithfully the relevant constitutional provisions, and different (sets of) criteria were used to distribute transfers through these three channels. Until the 8th Finance Commission (hereafter FC) brought in other criteria, the sharing of income tax was only on the basis of the neutral criterion of population, with a much smaller weight given to derivation.[7] The first and second FCs distributed the share of Union excise duties simply on the basis of population, but the latter kept aside 10 per cent for discretionary allocation. The 3rd FC added financial weakness and economic backwardness to the major factor of population introducing an element of equalization into tax sharing, but the weights were not specified. The 4th used the same factors with 80% and 20% weights respectively. The 5th, 6th, and 7th FCs further added per capita income as a distribution criterion for excise duties, the 6th FC dropping the backwardness factor. The 7th FC used an explicit revenue equalization criterion in the distribution of excise duties.

There were a number of breaks from tradition in the recommendations of the 8th FC. For the first time, an element of equalization was brought into the distribution of income tax too with the use of per capita income in two different forms (discussed in some detail in the next section). Also for the first time, a part of the shareable excise duties was set aside exclusively for the deficit states, a feature continued until the 11th FC. The general distribution formula contained the population criterion along with two forms of the income criterion. The 9th FC, in its two reports, added the criteria of poverty and index of backwardness alternately to the variables included by the 8th in the distribution of the states' share of income tax, and the Union excise duty.

The awards of the 10th FC again were characterized by departures from the trend. It completely dropped the derivation criterion for the first time. It also used the same distribution formula for the states' shares of both income tax and excise duty, a step recommended by researchers for some time, but not very popular in certain quarters because of the marked emphasis on equalization. The formula included the criteria of area, index of infrastructure and tax effort for the first time, besides the more orthodox

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[6] This section benefited from a compilation by Saumen Chattopadhyay.

[7] The Constitution might have intended the inclusion of the principle of derivation without any explicit requirement to that effect. A clue is provided by the stipulation that the income tax shares will not be available to those states where it is not levied.

criteria of population and (some variant of) per capita income. Finally, it recommended an alternative scheme of tax sharing with a fixed share of all Union tax revenues to be set aside for distribution to states on the basis of a single formula. This recommendation was accepted with some modifications in the definition of the distributable pool, and necessary constitutional amendment was carried out. The 11th FC gave its recommendations under the new system, essentially continuing with the same criteria as used by the 10th, with one minor change. Fiscal discipline was substituted for tax effort.

Grants-in-aid have been distributed on the basis of projected deficits remaining after the tax devolution. As the successive FCs widened the coverage of tax sharing, the relative size of shared taxes rose in comparison to grants, until grants became almost insignificant in the awards of the 10th FC. The 11th FC reversed this to some extent, but the overall trend towards greater reliance on tax devolution compared to grants, along with progressively stronger emphasis on equalization in the devolution of taxes is unmistakable.

5. CRITERIA FOR DISTRIBUTION

For an assessment of various criteria that have been in use by the successive FCs in India, and similar criteria used elsewhere, perhaps the best way is to group similar ones commonly in use and other criteria by the objectives sought to be achieved. This has the advantage of facilitating a discussion of pros and cons of similar criteria together and allowing us to take a view on the best alternative. But before we start the discussion on the various criteria, it may be appropriate, in view of the importance of the transfers in the sub-national budgets, to lay down a few features that should ideally characterize the information base used. Following Boex (2002) and Ahmad et al (1999), the data base/ variables used should:

- Be statistically sound and compiled using common principles,
- Be available and comparable across units of governments,
- Be as up-to-date as possible and regularly reviewed,
- Come from an independent source to the extent possible so that they cannot be manipulated by the different levels of government,
- Be different in effect from other variables, and
- Reflect needs or demands for public goods (for example, the number of clients), instead of physical input measures.

5.1 Equalizing fiscal capacity: The Income-based criteria

Variants of the income criterion have been in use in India since the 5th FC. There are other federations (e.g., Brazil and China) that use this criterion for intergovernmental transfers, but several developing countries lack the necessary data to make use of it. In general, this criterion appears to be directly linked to interstate equity, and therefore ought to be a progressive and redistributive one, ideal for equalization. But the limitations imposed by available data, unclear a priori standing and ambiguities about the best form of this variable to be used have marred its utility, despite its consistent use by the last seven FCs (and incidentally, the Planning Commission).

Ideally, the income variable to be used, if at all, is the personal disposable income, or the state level counterpart of the per capita national income. Unfortunately, this is not available, and gross/net domestic product is used instead. The problem with this is that neither the productive capacity of the state nor the purchasing power in the hands of the residents is accurately reflected in the estimated figures. The problems relating to actual location of the productive activity (see, Dholakia, 2003) and to large amounts of remittances are well known.

The case for including an income variable with a negative association is usually predicated upon a positive link of income with fiscal capacity, assuming that the system attempts equalization of fiscal capacity and not regional inequality per se.[8] While it is true that lower incomes can reasonably be expected to lower revenue capacity, it is also true that most researchers find a positive link between demand for public goods and income as well. Then, the net increase in fiscal capacity with rising incomes becomes uncertain, and so does the utility of income as a criterion in a distribution formula. International experience reveals that relatively few developing countries explicitly attempt to assess sub-national fiscal capacity due to their lack of detailed data on revenue bases. Direct capacity measures are more common in transfer formulas of developed countries, as is the case in Japan, Australia or Canada. It is therefore quite typical that - due to scarce data resources - fiscal capacity is proxied with the help of a macro index such as the GSDP in India. But this rough approximation is precarious, as it is doubtful whether the GSDP properly represents a state's revenue raising capacity. Also, GSDP data could conceivably be subject to manipulation (the so-called 'comparable estimates' are after all based on state level data with some marginal adjustments), resulting in bad intergovernmental comparability. Given its overwhelming importance in the allocation formula, one should certainly keep in mind the considerable impact of even small inexactitudes in the measurement of GSDP and its general inappropriateness to represent a state's "ability to pay". The inclusion of such a fiscal capacity proxy in the allocation formula could potentially do more harm than good, particularly in combination with large weights.

Two variants of the income criterion have been used in India, for some time in tandem: the distance criterion and the inverse income criterion.[9] The distance criterion reflects disparities in the states' per capita income and measures their absolute resource gaps, while the inverse income criterion essentially reflects relative disparities. The implications of using these alternative formulations differ: middle-income states lose out with the latter as compared to the former. Using the two together (with the same total weight) should put the distribution between those implied by either of them, with the relative weights determining the exact location. There have been other adjustments made in the use of this indicator, e.g., in the definition of the highest income. The sum total of all this fine tuning is to introduce increasing complexity with unclear gains in equity; at

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[8] These are quite different things, as is well recognized in the literature. For example, see Bird and Smart (2002), endnote 8, p.910. It is also well understood that equalization in the context of an intergovernmental transfer system should confine itself to equalization of fiscal capacity only.
[9] See, Srivastava (2003) for details.

least in the interest of simplicity, a straightforward distance formula should be used, and given the problems associated with this criterion, a lower weight should be attached to it, even if it implies an apparently less progressive distribution. After all, the moral hazard relating to rewarding lower growth also needs to be taken into account. Further, if this is taken as a proxy for fiscal capacity, then serious consideration should be given to computing and using the same directly.

5.2 Evening out different levels of expenditure needs: Population, area, poverty, backwardness and infrastructure indicators

5.2.1 The population criterion

The population criterion reflects the assumption that a state's expenditure needs generally grow proportionally with the number of its inhabitants. Although it is not a progressive criterion by itself, it has considerable equalizing impact. The criterion does not take into account the differences of states in their fiscal capacities, but provides equal per capita transfers to all states.

Population is an important and commonly used allocation factor in transfer formulae around the world. In fact population-based revenue sharing has clear advantages: it is a simple and transparent indicator, rather objective and provides a high degree of predictability. Several countries around the globe, like Brazil, Pakistan, Colombia, Germany, Spain, Portugal and Italy, rely heavily on the population variable for the distribution of general-purpose grants.

We believe that population in principle is an appropriate and rather objective allocation factor, as it targets every citizen - as the ultimate client of public services - equally. However it is elementary to ensure that accurate and timely data are used in the distribution formula. Unfortunately this is not the case for the FC allocation formula in India. "The Finance Commission is politically bound to use census data of 1971 for the calculation of the population-based shares, even though census information on 1981, 1991 and 2001 is available. The objective in using the 1971 population is to implicitly penalise states that do badly on the population front. This provision is bad in law (there are no constitutional provisions in this regard); bad in theory (states are penalised for in-migration, for reduction in mortality rate and because they are poorer) and bad in practice (in relative terms, the maximum loss is to the special category states)" (Srivastava and Sen, 2000).

Apart from these serious data flaws, one can point out that the small weight accorded to population does not correspond to its strong influence on expenditure needs. There seems to be no theoretically plausible reason, why successive FCs have consistently reduced the weight of population in the allocation formula. Given its current low weight and due to the inappropriate usage in the FC formula, we feel that the population variable is not used as it could be ideally and has lost much of its initial appeal.

5.2.2 The area criterion

The area indicator is intended to reflect cost disadvantages to state governments for providing basic services to its citizens. Less densely populated areas typically require higher levels of government services and these create higher costs (Martinez-Vazquez and Boex, 2002). A good example of such cost disabilities would be the desert areas in Rajasthan, where small villages situated at large distances from each other raise the per capita costs of providing basic services as well as infrastructure. Because of this, many other countries such as Indonesia, Italy, Nigeria, Brazil and Philippines have explicitly incorporated the criterion of geographical size in their allocation formula.

But the other side of the coin, with respect to the use of area (or population density) is that the costs of delivering public services tend to be higher in very densely populated areas as well – the well-known Baumol's cost-disease hypothesis. In fact, in Germany, city-states receive higher allocation due to the "disadvantage" of urbanization. Similar arrangements can be found in Korea and again Japan (Bird and Tarasov, 2002; Alm and Martinez-Vazquez, 2002). On the local level, in France even an 'urban solidarity' compensation was established supporting municipalities with more than 10.000 inhabitants (PWC, 2000). To be sure, this consideration applies more to the cities than states, but it could be relevant for highly urbanized states or states with a number of congested cities too, since a part of the burden of the local government tends to get transferred to the state government in the Indian context of limited flexibility of local governments to meet these special requirements.

Sometimes, other special locational characteristics are also in the reckoning. The Swiss grant formula used to include a factor that recognizes increased costs for cantons in mountainous areas (Dafflon, 1999) and in Nepal there have been lengthy discussions about including a "remoteness" variable in the formula design (Boex, 2002). Similarly, in the South African grant formula each rural person is counted as equal to 1.25 urban persons in recognition of the special problems of the rural areas (Ahmad, 1998). Countries like Morocco or Colombia categorize their localities even more accurately according to their size, by type and sometimes by region. Such attempts "have sometimes proved to be helpful guides to general expenditure needs" (Bird and Smart, 2002). To adjust the standard unit cost of providing public services in disadvantaged regions, Japan uses several modification coefficients such as "cold climate" or "rapid population decrease" (Alm and Martinez-Vazquez, 2002). In Malawi, 13% of grants are distributed on per capita basis exclusively to a number of drought-stricken regions (Martinez-Vazquez and Boex, 2002). Thus there is plenty of support on the use of geographical characteristics in general in the formula for distributing transfers.

While introducing the area factor for the first time, the 10th FC itself highlights some of the weaknesses of the area indicator. Their Report recognizes that costs do not necessarily increase proportionately with the size of the states. There are economies of scale to be considered also, and states with very small areas or with hilly terrain would face higher than proportionate per capita costs. To allow for these deficiencies and to avoid excessive variations in resource allocations among state governments on this count,

they established an upper and lower end to the area-based overall share of the states. The Eleventh Finance Commission has adopted these floor and ceiling limits of 2% and 10%, whereas the weight of the indicator has been augmented without any clear justification. In any case it should be pointed out that indicators such as population density or territorial size are very rough proxies of actual expenditure needs and are therefore always somehow unsatisfactory. But they do have the advantage of avoiding the moral hazard problem, being outside the control of the state governments.

5.2.3 Poverty and backwardness criteria

The 9th FC used poverty as a criterion in its first report despite recognizing the serious data and methodological problems involved, but better sense prevailed at the time of the submission of the final report. While removal of poverty is undoubtedly a laudable general objective, it is hardly the right one for a transfer formula, nor is it a good indicator of expenditure need. First, it is much better targeted through specific purpose transfers (with or without matching requirements), as it is being done in India. Second, at the time it was used, poverty was not even a good indicator of either revenue capacity or cost disability: the example of Maharashtra (that had high per capita income as also relatively high levels of poverty) would suffice to make this point. Finally, it is an outcome that is not outside the control of the states; public policy has a lot to do with the incidence of poverty. In this situation, using poverty estimates for distributing transfers could easily provide the wrong incentives.

In comparison, the backwardness criterion used by the second report of the 9th FC does not suffer from these problems. It can perhaps be improved by rationalizing and widening the variable as the percentage of population dependent on government expenditure (besides the scheduled caste and the scheduled tribe population, it could include children of school-going age, senior citizens, the disabled and other such categories), but it certainly has the advantage of not being influenced by government policy except in the very long run.

5.2.4 The infrastructure criterion

The introduction of the infrastructure criterion by the 10th FC in 1995 was meant to compensate state governments with smaller infrastructure endowments. It can be interpreted as a criterion that reflects cost deficiencies of a state. The assumption involved is that the greater the infrastructure deficiencies of a state are, the greater will be its costs of providing public services (Srivastava, 2003).

However the Finance Commission's explicit reason for incorporating the infrastructure criterion has been to promote development and growth of "backward" states. The ultimate aim is to improve living conditions, educational services and investment appeal of disabled regions (Report of the 10th Finance Commission, p. 176). This desire is of course understandable, though in this context of unconditional general-purpose grants it is not at all convincing. If the centre wishes to foster the development of infrastructure in

disadvantaged and poorer regions it should rather consider conditional specific-purpose grants, which are targeted and can be properly regulated.

The FC infrastructure index of the states is a weighted combination of economic and social infrastructure indices, which in turn are composed of a number of sub-indices. The economic infrastructure index consists of data on agriculture, banking, electricity, transport and communication facilities. The social infrastructure indicator contains data on educational and health service endowments, such as the number of hospital beds or primary schools. The weight of the infrastructure criterion has been raised to 7.5% by the 11th FC, with no clear justification in their report.

It is generally considered a "bad" practice in grant design to include the level of infrastructure availability as an allocation factor (Martinez-Vazquez and Boex, 2002). Notwithstanding this negative assessment, some countries other than India have used criteria based on physical infrastructure measures. Examples would be Nigeria or Ethiopia. Argentina in the '70s had a transfer formula which included an index of the "development gap" based on measures of housing quality, the number of vehicles and the educational level (Bird and Vaillancourt, 1998).

Using an infrastructure index in the transfer formula fails several tests of a 'good' indicator of cost disability. Its use can provide the wrong incentives, since it is not exogenous to the system; the recipient governments play a major role in the provision of infrastructure. Since the states with lesser infrastructure attain higher transfers, the index clearly provides incentives to the states *not* to invest in the creation and maintenance of infrastructure, as these measures would indirectly decrease future grant transfers. This index is based on inputs and outcomes, whereas an index of 'need' would be the right one to use. The needs of a state could be easily quantified by the number of potential 'clients' that should receive respective services or transfers (e.g., the number of school-aged children and elderly people). The grant literature widely agrees on this general rule for the assessment of sub-national needs (Martinez-Vazquez and Boex, 2002; Bird and Vaillancourt, 1998) and rejects input-based variables such as the FC infrastructure index.

In the Indian context, there is another aspect that needs to be noted. While the use of infrastructure index may reward states with low values explicitly, this is substantially undone in the computation of deficit grants. The assessed expenditure needs usually take the *existing* stock of infrastructure and allow for maintenance on such stock. This method results in lower maintenance costs allowed for states with poor infrastructure, cancelling out the gains through the explicit use in the distribution formula. At the present juncture, there are further complications with the use of this variable, due to an enhanced role of the private sector in the provision of infrastructure. The objective of promoting reforms may dictate unambiguous rewards for enhanced availability of infrastructure, but the fact remains that to the extent it is privately financed, government resources do not have to be augmented through transfers. Overall, the various problems relating to the use of infrastructure index suggest that it is a variable better not used in the transfer formula.

5.3 Fiscal performance criteria: bringing about budgetary balance

The fiscal performance criteria embedded in the FC devolution formula aim to correct possible systemic disincentives and foster fiscal discipline of state governments. Redistribution and voluminous intergovernmental transfers *per se* are said to have discouraging effects both on revenue raising (see, Lalvani, 2002) and expenditure restraints of the states. While the worries about proper incentive compatibility and sub-national fiscal prudence are surely justified, there are some serious problems and policy concerns about the integration of various fiscal performance criteria in a redistributive grant system. The basic criterion has taken two different forms so far as the devolution formulae are concerned, but other forms have been used by the FC in deciding debt relief.

5.3.1 Tax effort criterion

The tax effort criterion introduced by the 10th FC and continued by the 11th, aims to reward the states' revenue performance. A state receives a higher share in the FC tax devolution the more it exploits its presumed tax base. Due to the alleged lack of suitable data on the diverse sub-national tax bases, the Commission uses the GSDP as a proxy for the states' taxable capacity. Tax effort is therewith defined as the ratio of per capita own tax revenue of a state to its per capita GSDP. This simple tax-GSDP ratio is then additionally weighted with the states GSDP, to take into account revenue raising disabilities of poorer states. Apart from the fact that GSDP is a very simplistic indicator and does not take into account a large number of factors directly influencing the tax raising capacity of a state, and that better estimates of tax effort can certainly be made, there are *a priori* reasons for not considering tax effort a good distributive criterion.

As McLure (1997) argues: "It is difficult to justify including tax effort in grant formulas. It runs counter to the purpose of fiscal decentralization, which is to allow sub-national governments to decide how much tax effort to put forth." In fact the degree of tax exploitation ultimately depends on the political and ideological determination of each state government. States have different expenditure philosophies and a state should not receive additional equalisation transfers as a reward for levying more taxes to provide an above-average standard of public services. This criterion may be suitable for a highly centralized system, where sub-national governments have no autonomy with respect to determining tax rate or base and are expected to administer the tax laws as best as they can. India is clearly not such a federation. It is an imperfect indicator of fiscal efficiency too, simply because it is one sided and does not take into account the expenditure side of the budget. In a situation of widespread deficits, the anxiety to encourage tax effort and reduce the deficits is understandable; but the inherent problems associated with this criterion suggest that it should be used sparingly only when there is reason to believe that the states in general are lacking in tax effort. There is broad agreement on the theoretical prescription that in the long run, federal policies should try "to neither discourage nor encourage tax effort," and should be neutral.

Rewarding regions that exert higher levels of fiscal effort does not support the optimal distribution and allocation of public expenditures. Instead it might result in the use of federal resources on inappropriate or even wasteful local projects. To highlight the perverse outcome of the introduction of a tax effort criterion (like the one applied by the FC) imagine a state which has been successful in attracting investment and new economic activities due to the efficient provision of public services and low taxes rates. This state will be penalized twofold at the time of grant allocation. Both its supposedly low tax effort and the increased GSDP will lower the states position in the FC tax effort index resulting in lower transfers.

There are a number of countries that attempt to include explicit measures of fiscal effort in their distributive formulae. These include Colombia, Korea, Nigeria, Pakistan, Romania and Spain. Critical assessments of some of these systems generally indicate no impact on fiscal effort, and worse, significant allocative distortions (Ahmad and Baer, 1997; Shah, 1998; Martinez-Vazquez, 2002; Romanik et al., 1999). In the Indian context, additional difficulties with the tax effort index relate to its distortion through tax exportation by more developed states and possible non-linearities in the relation between the tax base and the tax revenue.

To sum up, it is likely that a high price is paid to motivate the states to raise higher taxes, which may not come about in practice, and may not even be desirable. The 11th FC lowered the weight of the tax effort criterion to 5%, but introduced the fiscal discipline criterion that has its own problems.

5.3.2 Fiscal discipline criterion

Essentially driven by the rising sub-national current and fiscal deficits, the 11th Finance Commission for the first time incorporated a "fiscal discipline" variable in the devolution formula. The FC actually constructed an index of fiscal improvement, which compares the ratio of a state's own revenue receipts to its total revenue expenditure with a "similar ratio" for all states. The idea is to reward states that have done relatively better in terms of their revenue balance. "The better the performance of a state in achieving revenue balance relative to others, the higher its share in devolution"(Srivastava, 2003). It is a performance criterion, which measures relative fiscal improvements in a reference period compared to a specific base period. Given the serious fiscal concerns in India, this "innovative" variable might appear appropriate on first sight, but a careful analysis shows serious weaknesses.

First of all, defining the criterion in terms of the change over a base year value can create a problem of rewarding past sins. It is generally thought to be easier to improve upon 'bad performance' as against 'good'. Further, the average against which a particular state's performance is judged is also in terms of change. Hence, when every state is doing badly, a state that only maintains its base year performance – good or bad – is rewarded. Thus, the encouragement to achieve fiscal discipline may not be strong. While these criticisms are correct in general, the use of the criterion has to be judged in the particular context of widespread deficits and more as a 'fire fighting' measure than as a standard or

regular one. Also, the use of levels instead of change is debatable in that it would perpetuate the fiscal advantages of the better-off states. Moreover, it is not quite clear, in the context of Indian state finances, whether it is really easier to improve upon low values than higher values of the performance indicator. Much of the revenue deficits consist of interest payments in the case of almost all states, and large deficits tend to cause increased borrowing resulting in higher interest payments and higher future deficits. This vicious circle is weaker for states with low deficits and relatively easy to break out of, as compared to high-deficit states. It is therefore not the 'technical' flaws, but the conceptual problems that we think are the clinching arguments.

First, this type of incentive for achieving a revenue balance cannot distinguish between different ways of achieving the improvement in fiscal discipline. Reduction in expenditures and increasing revenues are both possible routes to improve the balance. And this can be done through raising distortionary taxes and/or reducing 'good' expenditures. The effect of this criterion on the efficiency of the use of public resources is really unpredictable. Second, it fails to distinguish between spendthrift governments and those having deteriorating revenue balance due to factors beyond their control, e.g., natural calamities, economic downturn originating from macroeconomic factors, law and order problems or social unrest. Third, there is a political economy angle that may be considered a weakness of this criterion. In the federal setup of India, such a requirement may impinge on the fiscal autonomy of the states, and is not justifiable unless there are clear spillovers of their fiscal policies. Even when there are negative spillovers, unless the grantor government itself exhibits fiscal prudence, the case for linking fiscal discipline with distribution of constitutionally ordained transfers may not be convincing.

But probably the greatest flaw of this criterion is that it is unlikely to have a substantial incentive effect at all. Taking into account the entire political and federal fiscal framework, there is no great incentive for a short-term elected government to behave in a fiscally prudent manner. A government faces the trade-off between raising more debt (and speculating on federal gap filling) and being fiscally disciplined to receive the "reward" of higher FC tax devolution. The future increases of FC tax devolutions due to fiscal prudence will however probably be much smaller than the volume attainable through debt. A state government facing strong political pressure on a daily basis is therefore more likely to continue on the easy path of high deficits than to "fight" for rather uncertain future FC "rewards". As long as the centre cannot establish and keep up any efficient hard budget constraints, the fiscal discipline criterion will not prevent imprudent fiscal stances and increasing debt burden.

5.4 Collection/Assessment criterion: returning tax revenues to originating jurisdictions

This criterion was in use from the very first FC to the 9th, after which it was discontinued by the 10th, and has so far not reappeared. The weight attached to it varied between 10 and 20 per cent. While its removal has made the overall formula more equitable, it has predictably been criticised by the relatively developed states. In theory, the origin criterion is appropriate for the distribution of the proceeds of a tax when it is presumed to

be ideally in the domain of the states, but for some reason (usually administrative, but in the interest of uniformity too) is levied and collected by the centre. The idea in such a case is to approximate the revenues that a state would have collected, had it administered the tax itself.

Going by this logic, use of this criterion can possibly be justified for the additional excise duties (on sugar, textiles and tobacco, the power to levy sales tax on which was surrendered by the states to the centre through a tax rental agreement) and the taxes that the states could have collected if the centre did not abolish them (e.g. tax on railway passengers) or did not ignore them (taxes listed under art. 269 of the Constitution). Except for the last category, net proceeds (hypothetical after abolition) from the other taxes were actually distributed on the origin basis until the alternative scheme of devolution was implemented. But the use of this criterion for the distribution of income tax was not supported by this logic, as there has never been a presumption in India that non-agricultural income tax was also ideally included in the domain of the states. In fact, the record of the states in taxing agricultural income, a power that was assigned to them by the Constitution is dismal. Most states do not use this power at all, and those that do, confine its application to plantations only, creating loopholes that can be exploited in evading non-agricultural income tax.

At present, since the entire tax revenue of the centre is shareable *en bloc*, there is possibly a case for the use of this criterion with a very small weight, to compensate for the fact that the amounts that used to be (with justification) distributed on the basis of origin have been submerged in the aggregate.

6. CONCLUDING REMARKS

In the Indian system of statutory transfers, criteria-based transfers apply to tax sharing only. The deficit grants are given on the basis of post-devolution assessed deficits alone. While there may be several observations that one can make on the process of estimating these deficits, this is beyond the scope of this paper. Of course, it is difficult to assess any element of a transfer system in isolation, since these elements usually complement each other. This is particularly true of the objectives of the transfer system, the tools used and the process of distribution.

We have argued that if the primary concerns of our transfer system are to eliminate vertical imbalances and *enable* the states to minimize horizontal imbalances, then it is necessary to conceptually separate them out. Since it is possible to think of vertical imbalance as the minimum deficit among the individual states generalized to all states, a small amount of transfer for each state, suitably scaled up or down for the size, perhaps with population, should be adequate. This would leave the more difficult question of equalizing fiscal capacity without building in the 'wrong incentives', while maintaining certain other virtues like simplicity, predictability and regularity. Unfortunately, experience shows that there is a trade-off between conceptually the best system of equalization, that of a full-blown normative assessment and simplicity. In such a situation, various criteria are used to implement a formula based system as an

approximation. Moreover, if tax shares were small and the grants constituted the primary channel of centre-state transfers, then it would be possible to dispense with a complex distribution formula. The tax sharing would cover vertical imbalance and the grants distributed on the basis of normative deficits, as is done now, would take care of equalization. But in fact shared taxes are much larger than required to meet vertical imbalance alone, and from this fact arises the need to use distribution formulae that include factors representing fiscal equalization.

To maintain the basic features of the normative assessment system, revenue capacity and expenditure needs have to be reflected in the formula used. Not all transfer systems use the two-pronged approach, however. While some equalize revenue capacity only (e.g., Canada), others only look at expenditure needs (e.g., South Africa). This is perhaps all right if the inter-state differences on the omitted side are not large. In India, this is not the case, and hence all the FC formulae for tax sharing have tried to take into account both sides in recent times.

On the revenue capacity side, only variants of the income criterion have been used in India. Our assessment shows several shortcomings of the actual variables used, which make it more prudent to use them, if at all, with a much smaller weight than actually assigned in recent times. In fact, a direct assessment of relative revenue capacity is both possible and desirable; given that this can be accomplished at varying levels of complexity, a suitable balance between transparency and comprehensiveness can be struck.
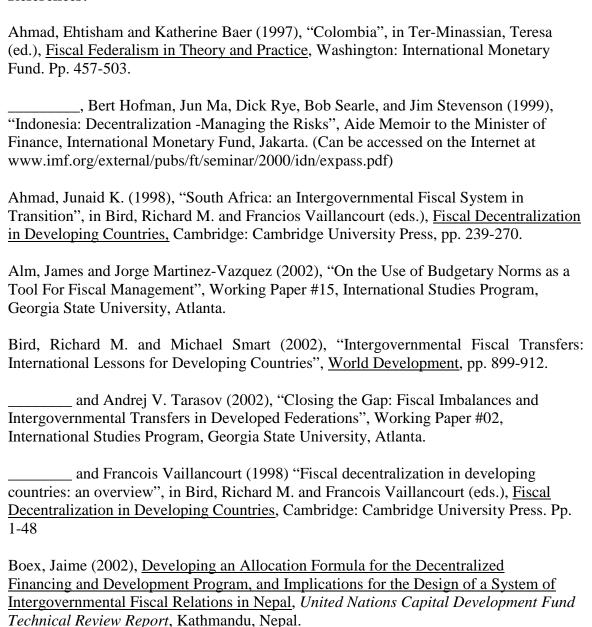
On the expenditure needs side, several variables have been used in computing statutory transfers in India. Population, the most neutral variable representing expenditure needs, has been consistently used, but with progressively declining weights. The peculiar requirement of using only 1971 population may be partly responsible for the declining weight; else, we think it deserves a much higher weight. We also think that the population data have not been used to maximum effect, the use of the details available could significantly improve the formula. In particular, an index of the percentage of population requiring special attention of the government (scheduled castes, scheduled tribes, children below a certain age, senior citizens, the seriously disabled) could be a very good indicator of expenditure needs. Including such a variable in the distribution formula with a reasonable weight would strengthen equalization and allow the weight on population *per* se to be reduced. Care has to be taken to select variables that are not outcomes of government policy to avoid problems relating to moral hazard (this is the reason we are critical of the poverty criterion). Geographical features like area, and other characteristics that may cause cost disabilities (e.g., hilly terrain) are also assessed to be appropriate, although it is necessary to take into account the costs associated with highly congested urban areas too. Criteria like an infrastructure index are best avoided, primarily due to incentive problems.

The FCs have superimposed fiscal performance indicators on the other two types of indicators discussed above. These are in principle bad criteria to be determining transfers, and can be justified only as temporary ones called into service for fire fighting

operations, in the context of all round deficits. Even if the latter was the case, a simplistic variable representing revenue balance would actually only be counter-equalizing; an appropriate multiple indicator based criterion has to be devised.

Finally, we believe that any significant transfers based on the origin of tax revenues is not logically maintainable; however, there is a case for a small amount to be transferred on this basis, or an approximation thereof.

References:

Ahmad, Ehtisham and Katherine Baer (1997), "Colombia", in Ter-Minassian, Teresa (ed.), Fiscal Federalism in Theory and Practice, Washington: International Monetary Fund. Pp. 457-503.

_____, Bert Hofman, Jun Ma, Dick Rye, Bob Searle, and Jim Stevenson (1999), "Indonesia: Decentralization -Managing the Risks", Aide Memoir to the Minister of Finance, International Monetary Fund, Jakarta. (Can be accessed on the Internet at www.imf.org/external/pubs/ft/seminar/2000/idn/expass.pdf)

Ahmad, Junaid K. (1998), "South Africa: an Intergovernmental Fiscal System in Transition", in Bird, Richard M. and Francios Vaillancourt (eds.), Fiscal Decentralization in Developing Countries, Cambridge: Cambridge University Press, pp. 239-270.

Alm, James and Jorge Martinez-Vazquez (2002), "On the Use of Budgetary Norms as a Tool For Fiscal Management", Working Paper #15, International Studies Program, Georgia State University, Atlanta.

Bird, Richard M. and Michael Smart (2002), "Intergovernmental Fiscal Transfers: International Lessons for Developing Countries", World Development, pp. 899-912.

_____ and Andrej V. Tarasov (2002), "Closing the Gap: Fiscal Imbalances and Intergovernmental Transfers in Developed Federations", Working Paper #02, International Studies Program, Georgia State University, Atlanta.

_____ and Francois Vaillancourt (1998) "Fiscal decentralization in developing countries: an overview", in Bird, Richard M. and Francois Vaillancourt (eds.), Fiscal Decentralization in Developing Countries, Cambridge: Cambridge University Press. Pp. 1-48

Boex, Jaime (2002), Developing an Allocation Formula for the Decentralized Financing and Development Program, and Implications for the Design of a System of Intergovernmental Fiscal Relations in Nepal, *United Nations Capital Development Fund Technical Review Report*, Kathmandu, Nepal.

Dafflon, Bernard (1999), "Fiscal Federalism in Switzerland: A Survey of Constitutional Issues, Budget Responsibility and Equalisation", Working Paper #278, Department of Political economy, University of Fribourg, Fribourg.

Dholakia, Ravindra H. (2003), "Measurement Issues in Comparing Fiscal Performance of States", Economic and Political Weekly, March 8, pp. 991-94.

Grewal, Bhajan S. (1999), "Federalism and Fiscal Equalization: Should India Follow the Australian Path?" in Ian Copland and John Rickard (eds.), Federalism: Comparative Perspectives from India and Australia, pp. 249-68, Manohar: New Delhi.

Lalvani, Mala (2002), "The Flypaper Effect: Evidence from India", Public Budgeting and Finance, Fall 2002, pp. 67-88.

Martinez-Vazquez, Jorge and Jameson Boex (2002), The Design of Equalization Grants: Theory and Application, processed, World Bank Institute, Washington, D.C: The World Bank

McLure, Charles (1997) "The Design of Intergovernmental Grants", in Martinez-Vazquez, Jorge, Charles McLure and Sally Wallace, Fiscal Transition in Kazakhstan, Manila: Asian Development Bank. Pp. 317-333

PWC (2000), Local Government Grant Distribution: An International Comparison, Price Waterhouse Coopers, London.

Romanik, Clare, Pena Coman, Daniel Daianu and Hernando Garzon (1999), "Romania: Winners and Losers: The Impact of Reform of Intergovernmental Transfers", paper prepared for the USAid Project: East European Regional Housing Sector Assistance, Urban Institute, Washington D.C.

Shah, Anwar (1998), "Indonesia and Pakistan: fiscal decentralization – an elusive goal?" in Bird, Richard M. and Francois Vaillancourt (ed.s), Fiscal Decentralization in Developing Countries, Cambridge: Cambridge University Press

Srivastava, D.K. (2003) "India", in Yun-hwan, Kim and Paul Smoke (Eds.): Intergovernmental Fiscal Transfers in Asia: Current Practice and Challenges for the Future, Manila: Asian Development Bank. Pp 83-137

Srivastava, D.K. and Tapas K. Sen (2000), "Fiscal Federalism in India: Issues Before the Eleventh Finance Commission", in Srivastava, D.K. (ed.), Fiscal Federalism in India: Contemporary Challenges, pp. 53-86, NIPFP and Har-Anand Publications: New Delhi.

Yilmaz, Serdar and Serap Bindebir (2003) "Intergovernmental Transfers: Concepts and Policy Issues", paper prepared for the Joint Conference of World Bank Institute and Korea Development Institute on *Developing and Strengthening the System of Intergovernmental Fiscal Relations and Fiscal Decentralization*, Seoul, July 21-23, 2003.