

DEVELOPING A QUANTITATIVE FRAMEWORK FOR DETERMINING DEVOLUTION OF FUNDS FROM THE STATE GOVERNMENT TO LOCAL BODIES

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ABSTRACT

*This paper is concerned with devising an approach to inter-governmental transfers, from State Governments to Urban Local Bodies. Our approach will comprise of five cardinal principles abbreviated as PEACE: (a) Political Feasibility (b) Equity (c) Adequacy (d) Computational Transparency and (e) Efficiency. This approach consists of two parts: One, need-based transfers and two, efficiency-based transfers. For the first, we need information on certain characteristics, which are available only at the district level e.g. income levels, indicators of backwardness, etc., while certain others are only available at the level of ULB such as area population. Given the difficulty involved in reconciling the characteristics at the district level and those at the local government level we have adopted a three-stage strategy to operationalise our approach to devolution of finances. **Stage 1:** We use some specially selected criteria in combination with estimated shares for each district to arrive at the disbursement to each district. **Stage 2:** Having obtained the disbursement for each district we then seek to employ certain other criteria to determine disbursement among each class of urban local governments, whether MC or MC-A or MC-B or MC-C. **Stage 3** Finally, we develop a method for distribution of funds to each ULB within a class of ULB. Efficiency-based transfers looks at efficiency of each ULB in terms of: (a) Its fiscal balance and changes in it from year to year (b) Recovery of property tax arrears (c) Expenses on administration and (d) Provision of public goods. The devolution scheme developed above has been tested for almost 250 ULBs of Maharashtra and found to be very useful in estimating devolution for each local body. However, the scheme is robust enough to be applied to other states, with, of course, the proviso that sufficient data on the selected criteria are available.*

Keywords: Decentralisation, Formula-based devolution, Local governments

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1. INTRODUCTION

That the Indian economy is undergoing a process of transition for some time now is incontrovertible. Whilst the winds of change started blowing since the mid-80s the process has gained impetus only of late. Indeed, this process has been hastened and intensified in the last decade or so, especially after the onset of liberalization and globalization in early 1990s. There have been several ramifications encompassing different sectors as well as the way we have been administering and organizing our economic affairs. The ongoing changes have implied modifications in rules and regulations and indeed have affected the institutional architecture concerned with organizational environment of the micro and macro policy management. This has meant both, setting up of new institutions, as well as, refashioning existing ones. One of the ramifications of assimilating the impulses of change has been that the *Central Government has had to initiate the process of improving its house keeping in terms of fiscal discipline*. More specifically, it has had to contain its fiscal deficit. This, given the lethargy of tax and non-tax revenues, has meant severe control on its expenditure. In a word, Indian leaders and policy makers and consequently the general public have had to take a lesson in the art of *letting go of institutions* (zero based thinking) and *learning to “pay for your lunch”*. These lessons and the accompanying pressures and adjustments have had to percolate down quickly to the second and third tier of government.

The Central Government has introduced 73rd and 74th constitutional amendments leading to transfer of additional functions to the local body governments (LBs henceforth). This granting of constitutional sanction and recognition to local bodies is administratively, politically as well as economically welcome. For it will lead to *‘power to the people’* as also put the burden of accountability via

performance

checks on the LBs. This *can* also result in self-government in the true sense of the term (as Lord Rippon had envisaged), without fear of arbitrary and ad-hoc encroachment by higher levels of governments. The amendments – in their various provisions – also allow the LBs to go beyond the traditional duties of looking after conservancy, water supply, roads and such other basic amenities, and set up '*plans for development with social justice*'. However, there are some problems.

If the well-intentioned and well-drafted constitutional provisions are to result in genuine change at the ground level, then *the functions listed in the schedules cannot be discretionary but must be mandatory*. The States need to be pressurized to take urgent steps to bring about the necessary legislative changes to remedy this unhappy situation. We wish to stress further that devolution of functions, if they are to be both realistic and meaningful, must be matched by *economic power and authority*. This alone will give LBs the power to control as well as perform and hence they can be legitimately asked to shoulder the responsibilities coupled with accountability. It is in this context that we commend the constitutional amendments, for making it mandatory on the part of the State governments, to constitute State level Finance Commissions with a mandate to *recommend principles and methodology as regards the devolution of funds to the LBs*.

2. BACKGROUND

This paper is based on the results of a much larger study carried for the UNDP/UNCHS. The objective of the study was to *help evolve criteria for allocation of funds as per the State Finance Commission recommendations from the State to ULBs to strengthen decentralization efforts by ULBs*. The study consisted of three segments. The First Segment, dealt with the following:

- Implementation of recommendations of the Tenth Finance Commission (GOI 1995) in Maharashtra
- Criteria developed by the First State Finance Commission (GOM 1997) for devolution of funds and their application

- Instances and examples of criteria used by other states for such devolution
- Implications of the Eleventh Finance Commission (GOI 2000) recommendations for Maharashtra

The main focus of the First Segment was to provide the background against which the functioning of ULBs in Maharashtra takes place. In the Second Segment we shifted our focus to the actual functioning of ULBs in the state. The major components of the coverage of the Second Output was:

- Evaluation of the general revenue and expenditure pattern of ULBs in Maharashtra and the level of services provided in cities
- Assessment of data gaps in the aforementioned areas
- Detailed revenue-expenditure information and service delivery standards for a representative sample of cities viz. Pimpri-Chinchwad, Thane and Navi Mumbai
- Comparison of the data and levels of income-expenditure and services, with various norms proposed from time to time

The third segment on which this paper is based is concerned with evolving a *formula based devolution procedure* to ULBs. The specific elements of this paper consist of Weighted devolution criteria, including a Mathematical Model, for transfer of resources from state to ULBs – striking a balance between equity and efficiency considerations

3. CONCEPTUAL FRAMEWORK

3.1 Some Preliminaries

There are several approaches or methods in existence for formulating an approach towards devolution of funds to Local Bodies. Some of these have, at least, a partially theoretical basis, while some others are purely ad-hoc (informed by political and such other exigencies). There are some premises or propositions that we presume

in working out our conceptual framework.

To begin with, realistic and pragmatic attitude demands that we should assess and delimit the relevant objectives that are to be addressed. *Not every 'good' objective needs to be incorporated in the objective function of every governing body (such as a LB).*

This point bears some elaboration. Burdening any given institution with several objectives leads to several problems. The multiple objective criterion decision-problem is often saddled with internal conflicts. This is generic to the class of such decision problems as a whole. There is always the issue of prioritization of the multiple objectives and the related problem of assignment of relative weighting pattern. There is a more important issue involved. The situation outlined above lead to almost an impossible situation with respect to accountability and evaluation of the concerned institutional performance. The game of passing the buck and general obfuscation is easily played. Also, given the total quantum of funds available for disbursement, it would be quite wrong to expect too much. At least as of now, one can expect that provision of local services with predominantly public goods character needs to be met through disciplined operations of LBs. For other things such as 'social justice' which involves redistributive effort on a large scale perhaps a higher level initiative is the answer. Burdening a LB with too many responsibilities makes evaluation of its functioning difficult.

Devolution schemes involve assignment of revenues of higher level government to lower level of government on the basis of some formulae. Though the origin of such revenues may be reflected in such formulae, we believe that it is not necessary and that the formulae should *inter alia* be based on some exogenous factors such as population, and some other measures of need.

There is an ongoing debate on 'dangers of decentralization for macroeconomic governance'. While there are protagonists of both views, the consensus seems to be veering round to the view that, *provided there is a stable and committed macroeconomic environment, and careful attention is paid to the design of institutions, application of decentralization principles does offer a significant potential for improvement of macroeconomic governance and efficiency.* There is of

course the theoretical consensus that for some of the functions, empowerment of local governments leads to more realistic and efficient choice of projects and implementation mechanisms. At any rate, the Indian policy makers have unequivocally thrown their weight behind this strategy. It cannot be over-emphasized that for this design to be translated into action needs the backing of substantial resources. Thus, *the quantum of resources to be devolved to the LBs has to be significantly hiked from the low historical values if the whole exercise is to be meaningful.*

Decentralization also entails that there should be no dictates from the top about what needs to be done. The presumption must be that awareness of local conditions, political awakening at the grass roots, and accountability enforced by regular, free and fair elections will surely help the local bodies to take appropriate decisions. Globally set purposive devolution should be done away with in such a situation. Neither should funds to be devolved be tied to tax sources emanating from relevant area. This is essential especially in the context of data problems and the possible variability in the devolution package over time. Of the allocative, distributive and stabilization functions of public finance, LBs should be confined to take care only of the first and the other two should be monitored at a higher level of governance.

3.2 Our Approach

Our approach, specifically and importantly, will comprise of five cardinal principles or '*Panchtatva*', abbreviated as **PEACE**. PEACE stands for (a) **P**olitical Feasibility (b) **E**quity (c) **A**dequacy (d) **C**omputational Transparency and (e) **E**fficiency. Let us now elaborate briefly on each of these, leaving the details of specific variables to be incorporated and the weighting patterns (with justification) to be employed for discussion at a later stage.

3.2.1 Political Feasibility

Administrative and technical agents (like bureaucrats or economists) often come up with brilliant plans or schemes. However, the best laid plans risk coming to naught unless they are laced with a healthy dose of realism. This, in the main, means that the implications of implementing or operationalizing the plans have to be

politically palatable (and perceived to be so!). Pragmatism therefore demands that due weight be given to political considerations. In concrete terms this implies the following:

- (a) The devolution structure recommended should not vary in distance from the existing devolution pattern by too much since such radicalism will be quite unacceptable to political agents. This translates into symbols as:

$\delta (dp^r, dp^e) \leq \epsilon \qquad \dots (2.1)$
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where,

δ is the metric,

dp^r is the recommended pattern of devolution,

dp^e is the existing pattern of devolution and

ϵ is the politically acceptable level of tolerance.

- (b) The corollary is that, *as a norm*, none of the LBs must get fewer funds (in absolute terms) in comparison to the existing scenario, as a result of our recommendations. The newer (innovative and/or stricter) criteria should in effect apply to the sharing of the feast in an incremental sense.

- (c) Transition in regimes should be informed by gradualism rather than radicalism. Nature and politics obviously move continuously rather than in catastrophes.

This means that if, α is the weight or proportion dedicated to newer criterion then:

$$\alpha = o | 0.5 |, \text{ i.e., } \alpha \text{ should be of order } 0.5.$$

3.2.2 *Equity*

Equity is a crucially important *need based* component. An authority that assumes a paternal role, vis-à-vis its citizens, can ill afford to neglect this aspect. Distributional considerations are paramount. Non-homothetic growth may be a natural phenomenon in some cases, but has weighty objections lined against it in the context of political

economy.

To repeat, if the power has to go to the people and their aspirations are to find articulation through the functioning of LBs, they have to be empowered and fortified with adequate funds (resources) to carry out at least the minimal normal functions. This reflects what is 'needed' by the relevant LB. There is normally a tendency to overestimate ones own needs (both because one really believes it and also as bargaining strategy). In deciding the actual devolution there has to be some sense of the *absorptive* capacity of the LB. Sudden increase in funds will lead to inefficiencies in terms of consumption as well as production use.

There are several parameters that select themselves automatically. These can be categorized into two types: one, the global indicators and two the local indicators at the level of LBs. Global here is being used in the sense of district level. These are assumed to be shared (to some extent at least) by the LBs in that district. At any rate very little information (consistent and reliable) is available at a level of disaggregation lower than the district. While the rural sector does not figure in our study, it needs to be noted that urban and rural sectors display strikingly different qualities in terms of quality and quantum of data available. This perforce leads to different treatment of the two sectors in terms of intensity and detail.

The need for equity is not just based on moral-ethico-political precepts. Post Keynes and given the inter-dependant nature of a maturing economy, *it is dictated by sturdy economic sense. Unless a basic level of development and dynamism is achieved in the rural sector, the urban sector will find it successively more difficult to grow and develop (suffocated as it will be by effective demand)*. The huge market potential for both consumption and producer goods (which is so very essential for a vibrant economy) will remain a distant chimera.

3.2.3 Adequacy

Scarcity is omnipresent; indeed it is the *raison d'être* for economics and economists. The resource gap between what is available and what is 'needed' will be with us in the foreseeable future. One way out of the difficulty is to increase the Central pool of funds to be disbursed to a substantial extent. Given the context of the withdrawal of

the state from many traditional spheres, one cannot realistically expect too much by this route. The LBs must learn to stand for, and help, themselves. This solution has its own limits and is beset with problems; however, there is no readily available alternative. Efforts for closing this gap by LBs must be lauded and rewarded by clubbing it with the efficiency criteria.

There are many issues – data problems apart – that are involved here. For instance there is the question of the extent to which *sub-national governments may be allowed to set their own taxes*. It is feared that excessive latitude in this regard can create unacceptable level of complexity and administrative burden, as well as spatial inequities and distortions in allocation of resources. Within limits, these problems need to be tolerated in the interest of gaining the benefits of decentralized government. There is the other issue of changing regulatory practices in order to allow a *greater access to the credit markets* for the LBs. This is especially important in the context of the large capital requirements for infrastructure development. Which of these is the better option is a moot question answerable only in terms of actual empirical evidence. *Indeed, rather than a clear option, this involves a selection of a proper mix of these and similar such possibilities*. The need to try out innovative experiments however is beyond doubt. One of the important lessons that can be learnt from evidence elsewhere is that it is better if commercial principles are followed and the LBs have to compete for capital with other borrowing agencies in the interest of efficient utilization of resources.

3.2.4 Computational Transparency

Checking and replicating the devolution pattern as given by our formulation should be transparent and simple. Ad-hocism in setting the devolution pattern has the great defect that it makes even discussion and criticism difficult. Also there is a loss of credibility and all kinds of suspicions about motivation begins to surface, which is counter productive. The word “simple” used above in the context of devolution pattern, is being used as an antonym of complex. Of course, given the multitude of factors that need to be considered the whole algorithm is bound to become somewhat complicated. However, a detailed roadmap of the algorithm can be set out which can be followed by users of the algorithm without continuous guidance by the creators of

the algorithm. Computational transparency also lends itself to constructive discussion, in that, it is possible to undertake the exercise of scenario building and simulation, and present it to the ultimate policy maker. Also, the logical structure can be traversed backwards and forwards thus making it useful.

3.2.5 Efficiency

This is really a corner stone of our conceptual framework. In the present context of the Indian economy, whence we are in the process of making changes in the way we conduct our macro-management affairs, there can be no doubt about the importance of having *incentive compatible systems* in place. As economists, we would push very hard for this component to be the most important (weight wise) in the scheme of things. However, political feasibility as well as adequacy requirements restrain us from going too far. Incentive compatible system implies that every effort reflected in performance gets a reward and every slide on efficiency front is penalized. Also, there is a static and a dynamic component to this criterion. For example, if a LB is well off in its current performance terms, this will entitle it for a reward. Further, if its performance involves a switch in regime (i.e., from being relatively better a LB becomes absolutely better off; illustratively, this will happen when its small deficit changes into surplus), once again a bonus may be given to the LB. Alternatively, a unit may be badly off but if it shows improvement (a return of the prodigal to the fold!) it would be entitled to a bonus.

Given that the total funds that are being disbursed under this criterion are not very large, the signaling aspect of this criterion needs to be underlined. There is a further point to be made here. Logically, efficiency as a criterion can conflict with some of the other components in our conceptual frame. This is a standard problem of a multi-objective decision function that we referred to earlier. Thus, it is conceptually necessary to set up the decision function in an add-on fashion rather than in a single simple formula. Of course, ultimately the whole exercise can be consolidated and hence a single formulation is implied, even by this approach.

Before turning to the mathematical formulation, we would like to comment on *two issues that we believe to be of crucial importance*. The first is about the rural

urban breakup as far as the resources go and the second is with regard to data problems.

It is important to note that urbanization is more than a demographic phenomenon. It is a societal transformation along the rural-urban continuum. At the beginning of the 21st century, cities and towns form the frontline in development campaign. Within a generation the majority of world's population will live in urban areas and the number of urban residents in developing countries will double to around 2 billion. *The urban transition offers significant opportunities for countries to improve the quality of life for all its citizens through sustained economic growth leading to broad social welfare gains.*

In the context of political and fiscal decentralization along with the general environment of globalization, the shifting of trade and production towards cities with market advantage needs to be noted. The industrial and commercial activities located in urban areas account for half to four-fifths of GDP in most developing countries. The development of urban areas is closely linked to rural economy through exchange of goods, services, capital and social movement, and employment opportunities. Against the backdrop of these comments, let us look at the Indian situation vis-à-vis the resource flows from the FCs. This examination is important even though, as we have stated above the rural sector is not relevant to our study. The reason is that there is a close nexus between the rural and the urban sector and to some extent the problems of urban sprawl and urban decay that we see in Indian cities is due to the neglect of rural areas. Thus, in some ways, the way to alleviate urban problems it may be required to uplift the rural areas and offer considerable support to Rural Local Bodies (RLBs). Strengthening RLBs will create better living conditions in rural areas and blunt the incentives to migrate to urban areas.

The Finance Commissions at the Center have suggested it to be 80:20 division in favor of rural segment, and many finance commissions at the state level have been following suit. Indeed, in Maharashtra the actuals show the division pegged at 88:12, which is completely unacceptable to us. Now, at the national level the urbanization is of the order of 27 percent. Thus given the economies of scale involved in servicing the people who are rather more densely packed in urban settings, 80:20 may not

appear terribly skewed. However, given that Maharashtra is one of the most urbanized of states, with 42 percent urban population, devolving only 12 percent defies reasoning. (Further, even within ULBs, MCs get a huge proportion so that the councils get a pittance). Whilst it may perchance be true, that the ULBs are in a better position to raise revenues on their own, it needs to be remembered that whether it is education or health or water supply or sanitation, the ULBs are called upon to do much more than the RLBs: the consequences of non-provision in urban areas are likely to be more severe and immediate.

In all arguments that one comes across in this regard, there is a clear bias in favor of rural section, captured in the phrase: “*India lives in her villages*”. Everything to do with cities is frowned upon almost as an evil! (Just as the West is caricatured to be bad, so, within India, cities are caricatured as hotbeds of crime and immorality). *It should be borne in mind that 90 percent of revenues and 60 percent of our GDP is contributed by the cities, yet at the municipal level they receive as revenue only 0.6 percent of the GDP. Even the plan outlay for urban development over Plans has come down from 8 percent to 2.6 percent.* We think it to be incontrovertible that whereas from a historical perspective there is an undoubted primacy to rural (*chronological as well as logical sense*) vis-à-vis urban segments, it is restricted to only the initial causation. When one comes to discussing the perpetrating causes of growth and development there is a role reversal. *The future is decidedly urban. The earlier we recognize it explicitly the better it will be for all of us.* The point here is that we would like the devolution to be 60:40. But, it is not feasible since it would be too drastic a departure from historical path and also the scale economies referred to earlier come into play. Further, as a rule RLBs are poor and they cannot be starved of committed expenditure (in terms of salaries et al) for, then, we would not allow them to become healthy enough to look after themselves. We have also to take cognizance of the argument that at least in part, the urban malaise is due to rural underdevelopment and hence helping the rural segment in fact helps the urban segment.

We will now turn to the data situation. Theoretical arguments are one thing but for them to be relevant they need to be operationalized in empirical terms. That is possible only if there is a strong database available. The data on LB specific parameters such as area, population serviced, backwardness, production levels are

simply not available. The data for these characteristics are available only at the district level. The distributional characteristics at the LB level have perforce, to be given a go by. One is forced here to make a heroic assumption that the district level characteristics are uniformly distributed across LBs. This is far from satisfactory especially if one wants to introduce efficiency criteria based on service delivery as well as financial performance.

In this day and age of information technology, and for a forward looking and IT savvy state like Maharashtra, it may not be too much to expect a better data system. **We thus very strongly recommend that there should be a cell set up on a permanent basis that would be involved in data collection and monitoring the quality of the same.** Indeed such a cell would also be helpful in collecting and computing the component of our scheme that needs to be computed in an iterative fashion over time, being dependant on the data that would become available in the future.

4. EMPIRICAL EXERCISES

The approach discussed herein focuses on Districts of the state of Maharashtra. We will be estimating the devolution that will take place to each District. Before computing devolution to each district we need to identify the criteria, such as Population, Area, etc. according to which devolution will take place. Once this has been determined we need to have in place the characteristics of the districts that will determine the weighting pattern according which the share of each district will be computed.

4.1 Availability of Resources to be Devolved

It is imperative that we know the size of the cake that is to be divided among districts and Local Bodies before we recommend the actual devolution. As per the pattern observed over the years 1995-96 to 1999-2000 the following points may be made:

- The total revenue receipts of the State government were Rs. 95632 crores, of which

- ULBs received total grants of Rs. 2712 crores
- RLBs received total grants of Rs. 19388 crores
- The sum of the grants received by the ULBs and RLBs, which was Rs. 22100 crores was 23.11 percent of the total revenue receipts of the State.
- Of the total of Rs. 22100 crores received by the Local Bodies the share of ULBs was 12.27 percent and the share of RLBs was 87.72 percent.
- The rate of growth of revenue income for the state has been observed to be 10.15 percent p.a. over a 5 year period. It is expected that this rate of growth will continue in the future as well.

However, if one carefully looks at the year to year changes, there is significant variation. Table below shows the variations over the years.

**TABLE 4.1
YEAR-WISE DEVOLUTION OF FUNDS TO LOCAL BODIES**

Year	Devolution (Rs. crores)	Change (%)
1995-1996	3154.00	–
1996-1997	3777.00	19.7
1997-1998	4250.00	12.5
1998-1999	4766.00	12.1
1999-2000	6153.00	29.1

Given such wide variations and the difficulty in predicting the actual quantum that would be available from the State Government over the next 5 years, we felt that it would be best to set out our methodology and the consequent distribution of funds to RLBs and ULBs assuming a notional amount to be distributed during 2001-02. *The notional amount that we have assumed is Rs. 1,000 crores. Actual amount to be devolved to Local Bodies could be seen as some multiple of Rs. 1,000 crores and can easily be worked out using the algorithm that will be developed in the study.*

It may be noted that the notional amount of Rs. 1,000 crores that we have

employed is the assumed *devolution* to the Local Bodies. We do not attempt to estimate the level of Total Revenue Income of the State Government. Further, we do not attempt to estimate the share of Local Bodies in the Total Revenue Income of the State Government. We believe that predicting or estimating the Total Revenue Income is fraught with uncertainty, which is best avoided in the building up of the model that we develop here. As far as the share that would be available to Local Bodies is concerned we believe it would be a negotiated value and no view can be taken regarding this at this moment.

We divide the total devolution going to ULBs into two components: *need-based* devolution and *efficiency-based* devolution. The former will be allocated 60% of the notional amount of Rs. 1,000 crores and the latter 40%. *A diagram of the entire of devolution scheme that we have discussed below is given at the end of the paper.*

4.2 Approach to Need-based Disbursement

A variety of criteria have been used by the various Central Finance Commissions for disbursement of funds to States. Many of these have changed in importance over the years. For example, the weight on population has been going down over the years. However, as far as the Central Finance Commission recommendations are concerned no distinction needs to be drawn between the geographical boundaries of the State and the jurisdictional authority of the State government. The jurisdictional authority of the State government exactly matches the boundaries of the State. This convenient state of affairs breaks down when one is concerned with disbursements below the level of State governments.

The largest geographical entity inside a State is the district. Most of the detailed information, such as Distance from highest income, index of backwardness, etc is available only for the districts. As far as the ULBs are concerned, apart from financial data, information is available on their population and area. This is a much better state of affairs than for Rural Local Bodies: there is not even an accurate estimate of the number of villages in Maharashtra!

As far as financial data are concerned, criteria such a Tax Effort and Fiscal Discipline have no relevance at the level of the District; these are relevant only at the

level of Local Governments.

Given the difficulty involved in reconciling the characteristics at the district level and those at the local government level we have adopted a three-stage strategy for the devolution of need-based funds:

- **Stage 1:** We use some specially selected criteria in combination with estimated shares for each district to arrive at the disbursement to each district (There are 34 districts in the state of Maharashtra).
- **Stage 2:** Having obtained the disbursement for each district we then seek to employ certain other criteria to determine the disbursement among class of urban local governments, whether MC or MC-A or MC-B or MC-C
- **Stage 3:** Finally, we develop a method for distribution of funds to each ULB with a class of ULB or urban local government.

As far as the efficiency based allocations are concerned, we have been able to devise a methodology that directly targets ULBs.

4.3 Criteria Used for Need-based Disbursement in this Study

The Criteria that will be used in this study will now be discussed¹:

1. Population: Population of the Urban segment alone is considered here.
2. Area: Area of Urban segments of the districts is considered.
3. Distance from District with Highest Per Capita Income: The rationale for this is fairly clear. By this criterion the district with the highest income will get the least disbursement (possibly equal to zero). We preferred to use this criterion as compared to measuring distance from the per capita SDP of Maharashtra. While the final set of shares of districts emerging from the alternative would be very similar, we felt that measuring distance from highest per capita income would be a

¹ Professor Ravi Srivastava pointed out at the JNU/UNDP/UN-HABITAT Workshop that the presence of so many characteristics in a devolution scheme could lead them to work at cross-purposes. We believe that by an appropriate weighting scheme – including a weight of zero for some of the criteria – this problem can be overcome. The reason for using so many criteria is to offer as much flexibility to the user of the methodology as possible.

superior alternative. Measuring distance from per capita SDP would have resulted in a mixture of positive values (where the per capita income of a district is smaller than the per capita SDP) and negative values (where the per capita income of a district is greater than the per capita SDP). This mixture of positive and negative complicates computation of shares of districts. The alternative employed here, while conveying a very similar picture, eases computation considerably.

4. Inverse Income: This criterion instead of using per capita income, uses the reciprocal of per capita income as a characteristic. Compared to the distance criterion, the inverse income criterion allocates shares, which are relatively higher not only for the poorest states but also the richest states at the cost of middle income states. The exact procedure used is discussed below.
5. Backlog as a Backwardness Indicator: The earliest information on backlog of development (with respect to roads, education, electrification, etc.) comes from the GOM (1984). That Report had computed the expenditure that would be involved in clearing the backlog in different sectors, such as roads, irrigation, village electrification, education (general and technical), health services, water supply, land development and veterinary. These expenditures were reported for each of the 26 districts that were in existence at that time. While we did feel that the picture that was presented by the Report of the FFC might not have changed much over the last decade and half, it was nonetheless better to obtain more recent information on backlog. We have obtained this from the GOM (1997) The main advantage of using the later Report (GOM 1997), apart from using more current information, is the fact that information was available on districts that came into existence after the First Report of the Fact Finding Committee (GOM, 1984).

The total quantum of expenditure that would be required to eliminate the backlog as estimated in 1994 has increased substantially as compared to the expenditure estimated by GOM (1984). While the GOM (1984) reports a total of Rs. 3,177 crores (excluding Mumbai), the GOM (1997) estimates a figure of Rs. 15,106 crores, an increase of 4.75 times. We have made use of the backlog indicators given in the GOM (1997) as a separate criterion to capture the backwardness of a district.

6. Income from (Mining + Secondary sector + Tertiary Sector) as a proportion of Total Income of the District (Distance Approach):. Here we assume that all income created in Mining, Secondary Sector and Tertiary Sector originates in urban areas and distance from the highest (Mining + Secondary sector + Tertiary Sector) income district in a manner similar to that employed in Criteria number 3 above.

The criteria, along with the weights, used in this study are given below. In deciding weighting pattern past practice as well as informed judgment is crucial. Some of the considerations that were important in the determination of weights are listed below:

- Too high a weight on Distance discriminates rather strongly against the high-income districts as compared to low-income districts. While efforts must be made to reduce the gap between districts, better performance must not be penalized by too high a weight on this characteristic.
- The weight given to Backlog is in keeping with the recommendation of GOM (1984). Besides it was felt that this characteristic would be correlated with Distance and too high a weight would discriminate against better off states rather excessively.
- The Central Finance Commissions have been progressively reducing the weight attached to population. While the weight given to this characteristic by the Tenth Finance Commission was 0.20, this was reduced to 0.10 by the Eleventh Finance Commission. While we agree that too high a weight gives populous jurisdictions excessive allocation, we felt that the weight given by the Eighth and Ninth Finance Commission would be appropriate for an exercise that is being conducted for the first time in the State.
- For provision of local public goods, it is *Area of coverage* that is probably more important than the *number of beneficiaries*. Local public goods are more susceptible to congestion than pure public goods and hence area of a jurisdiction combined with

its population would be adequate to estimate the need for funds of a local body within a district.

**TABLE 4.2
WEIGHTS FOR CRITERIA FOR DISBURSEMENT**

Criteria	Weights
Distance from Highest Per Capita Income District (DIST)	0.150
Backlog in terms of Backwardness Indicator (BACK)	0.150
Urban Population (UP)	0.150
Urban Area (UA)	0.200
Income from (Mining + Secondary sector + Tertiary Sector) as a proportion of Total Income of the District (Distance Approach) (MST-DIST)	0.150
Inverse (Mining + Secondary sector + Tertiary Sector) Income (INVMST)	0.100
Number of Municipal Corporations (MCS–weight)	0.015
Number of ‘A’ Class Councils (A–weight)	0.015
Number of ‘B’ Class Councils (B–weight)	0.035
Number of ‘C’ Class Councils (C–weight)	0.035

4.4 Determining Shares of Districts for Need-based Disbursement²

Having identified the criteria to be used for disbursement and assumed certain weights for these criteria, the next step is to estimate the shares of districts under each of these criteria. We will now discuss the way in which we estimated the shares of districts. It will be noted that there are certain criteria that are global, in the sense that these are applicable to the district as a whole, both its Rural and Urban segments. On the other hand there are other criteria which are specific to the Urban segment alone. We will first discuss the derivation of district shares based on global criteria and then look at shares derived from segment-specific criteria.

One important decision had to be taken while determining the shares of districts and this pertained to the inclusion or exclusion of Mumbai from the exercise.

² Karnik et al (2002) give the detailed mathematical formulation of this procedure.

Given the dominant presence of Mumbai in all spheres of the State, including it distorts the picture completely. Hence, we have excluded Mumbai from all computations in our exercises. We devise a separate method to compute the share of Mumbai.

Global Criteria

1. Distance from Highest Per Capita Income District (DIST): Distance is defined as the gap between the highest per capita income of a geographical area (say, district) and the per capita income of other areas. Thus, defining:

$$\text{Distance} = Y_n - Y_i \quad \dots(4.1)$$

where,

Y_n is the highest per capita income among all districts and

Y_i is per capita income of another district

The share of a district is given by:

$$S_i = N_i (Y_n - Y_i) / \sum_{i=1}^I N_i (Y_n - Y_i) \quad \dots(4.2)$$

where,

N_i is population of the i th district

The construction of the formula is such that the poorer the district larger its share in revenue sharing arrangement. This will also imply that highest income district would get zero share. Note that we have excluded Mumbai from these computations.

2. Backlog (BACK): Given the total amount of expenditure for eliminating the backlog of all districts in the State (excluding Mumbai), we obtain the share for each district as ratio of the backlog expenditure for a district to the total backlog expenditure. Naturally, districts with a higher ratio will command a greater share of disbursement according to this criterion.

Urban Criteria

1. Urban Population (UP): Shares of the urban segment of the district under this criterion is computed as under.

$$Q_i = N_i / \sum_{i=1}^I N_i \quad \dots(4.3)$$

where,

N_i is the urban population of the i th district.

2. Urban Area (UA): Shares of the urban segment of the district under this criterion is computed as given below:

$$AS_i = A_i / \sum_{i=1}^I A_i \quad \dots(4.4)$$

where,

A_i is the urban area of the i th district.

3. Income from (Mining + Secondary sector + Tertiary Sector) as a proportion of Total Income of the District (Distance Approach) (MST-DIST): As stated earlier the rationale for this criterion is the hypothesis that the overwhelming proportion of income in mining, secondary and tertiary sectors is generated in urban areas. The higher this proportion is for a district, the better off it is and should qualify for a lower share by the need-based approach. The method for generating weights is exactly as given for “Distance from Highest Per Capita Income District” under Global Criteria above. The only difference is that under the usual distance criterion we use distance from highest per capital income to generate shares, here we use distance from highest ratio of income from (Mining + Secondary Sector + Tertiary Sector) to Total Income.
4. Inverse (Mining + Secondary sector + Tertiary Sector) Income (INVMST): This is computed as follows:

$$\text{Share of a district, } B_i = (N_i/Y_i) / [\sum_{i=1}^I (N_i/Y_i)] \quad \dots(4.4)$$

where,

N_i is the urban population of i th district and

Y_i is income from (Mining + Secondary + Tertiary) sectors of the i th district.

5. Weights for ULBs: Separate weights have been assigned depending on the number of various levels of ULBs present in a district. The shares for the district are then computed in terms of the ratio of number of ULBs of a particular level (say, number of MCs in Thane) in the district to the total number of ULBs in that level in all of Maharashtra (say, total number of MCs in the state of Maharashtra).

4.5 Efficiency-based Disbursement to ULBs³

The total amount that has been set aside for efficiency based disbursement is 40 percent i.e., Rs. 400 crores will be available for this purpose out of the notional amount of Rs. 1,000 crores.

We view efficiency in two broad ways:

1. Performance
 - (a) Levels (DR)
 - (b) Changes (Δ DR)
 - (c) Recovery of arrears in property taxes (PTAX)
2. Efficiency
 - (a) Administration (ADMIN)
 - (b) Public Goods (PG)

The separation between Performance and Efficiency allows a division of the funds reserved for Efficiency-based disbursement: we set aside 12.5 percent of these funds for Performance and 87.5 percent for Efficiency.

Performance: Levels (DR): This is understood in the sense of overall fiscal balance. We have adapted the measures that have been proposed by the Reserve Bank of India for evaluating the fiscal performance of Indian states. The measure of Performance: Levels that we have used may be called “Own Deficit” of an ULB. This is defined as:

³ Karnik et al (2002) give the detailed mathematical formulation of this procedure.

$$DR = (\text{Total Expenditure} - \text{Own Income})/\text{Total Expenditure} \quad \dots(4.5)$$

Own Income of an ULB consists of Octroi, Property tax, Water charges, Conservancy and Sanitation, Street Lights, License Fees and Entertainment, Building Rents.

Obviously one can compare only similar ULBs. Hence we compute the above for each ULB but compare it only with a similar ULB. Thus the performance of an ULB in the Municipal Corporation category cannot be compared with performance with an ULB in the Councils A category.

This measure gives an indication of the dependence of the ULB on resources (such as grants) from a higher level of government. As defined, DR may be positive (indicating an own deficit) or it may be negative (indicating surplus). Creating a set of weights for indicators that are both positive and negative creates major problems of comparability. We have overcome this problem by adopting a rule that only ULBs with a surplus i.e., a negative DR, will receive a bonus and that the total amount allocated for DR will be shared between ULBs (in a particular category) in proportion to the level of their surplus.

It needs to be noted that allocation according to DR will use values of this ratio for the latest year for which data are available. Hence, it is not possible to set out allocations to ULBs according to this criterion for a number of years in the future. *DR will have to be computed afresh every year and then allocations determined.*

The amount set aside for DR is 5 percent of the Rs. 400 crores available for efficiency-based disbursement i.e., Rs. 20 crores. This amount has to be distributed between various classes of ULBs in some proportion. Using the broad division between Municipal Corporations and Municipal Councils, we believe that the share of the former should be 25% of the total. This represents a lowering of the historical shares that have been allocated to Municipal Corporations in Maharashtra. Among the Councils, MC-C are deemed to be weakest in financial terms and the share of this class must be highest, followed by MC-B and then by MC-A. Thus the divisions of

funds is MCs: 25%; MC-A: 20%; MC-B: 25% and MC-C: 30%.

Performance: Changes (Δ DR): The indicators generated out of Performance (DR) may be termed static indicators i.e., indicators for a particular year. We also need to reward ULBs that show improvement over time. For this we look at the changes in the ratio DR that has been defined above. Given the way in which DR is defined, an improvement over time would be reflected by a decline in the value of the ratio. Hence, if Δ DR is negative for an ULB, it indicates an improvement in performance. Only ULBs with negative Δ DR will qualify and the amount set aside for this indicator will be divided among ULBs in the same manner as DR.

As in the case of DR, it is apparent that allocations according to Δ DR will need to use changes in the values of DR for the latest year for which data are available. It is clearly not possible to set out allocations to ULBs according to this criterion for a number of years in the future. *DDR will have to be computed afresh every year and then allocations determined.*

The amount set aside for Δ DR is half that reserved for DR: 2.5 percent of Rs. 400 crores i.e., Rs. 10 crores have been set aside for Δ DR. This amount is distributed among the various classes of ULBs in the proportions set out above.

Performance: Recovery in Property Taxes (PTAX): While some aspect of recovery of taxes is reflected in DR, it was felt that we should also specifically focus on recovery of a specific tax. Property taxes are already and are likely to be very important for the fiscal health of an ULB. All ULBs face severe problems in the recovery of property taxes leading to current year's arrears and accumulated arrears for previous years. The measure of performance discussed here compares recovery of current and accumulated arrears in property tax in a year with total current demand and arrears in property taxes.

$\text{PTAX} = \frac{\text{Current Demand And Arrears In Property Tax Collected}}{\text{Total Current Demand And Arrears In Property Taxes}} \dots(4.6)$
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The need to use the latest data on Property Tax recovery is paramount which means requires a continuous data collection process.

The amount set aside for PTAX is 5 percent of the Rs. 400 crores available for efficiency-based disbursement i.e., Rs. 20 crores. Once again this is distributed various classes of ULBs in the set proportions.

Efficiency: Administration (ADMIN): Apart from overall performance, a local body must be efficient in providing services i.e., public goods, to the citizens. The ability to provide such services will be severely compromised if expenditure on administration captures a large part of the resources available to a local body. Consequently we need to devise an indicator that will penalize an ULB for spending excessively on ADMIN to the detriment of public goods provision. The indicator that we use is given by:

$$\text{ADMIN} = \frac{\text{Expenditure On Administration, Salaries, Pensions, Etc.}}{\text{Total Expenditure}} \quad \dots(4.7)$$

The higher is this ratio for an ULB the lower will be its share in allocations under this head.

Given that a total of Rs. 400 crores are available for disbursement under the efficiency related criteria of which Rs. 50 crores are reserved for Performance, the amount available for efficiency is Rs. 350 crores. Of this amount we reserve 25 percent for ADMIN i.e., Rs. 87.5 crores. As before, this amount is distributed among classes of ULBs in the proportions determined earlier.

Efficiency: Public Goods (PG): We believe that the main objective of decentralization should be to provide local public goods to citizens in a way that reflects their preference structure. Under Public Goods we include Education, Libraries, Free Reading Halls etc. Sanitation, solid waste management, drain, mechanical and electrical etc., Fire Brigade, Water supply, Epidemics and Public Health, Roads and Street Lighting. The indicator used is given by:

$$\text{PG} = \text{Expenditure On Public Goods/Total Expenditure} \quad (4.8)$$

A possible objection to the use of this ratio is that part of the expenditure on public goods may be for salaries of the bureaucracy in charge of public goods provision. This includes salaries of engineers in charge of, say, sanitation as well as salaries of clerical staff. It could be argued that while expenditure on salaries of

engineers is important for service delivery that on clerical staff is not. While we agree with the sentiments underlying this view, the current availability of data precludes us from operationalizing such an approach. It must, however, be mentioned here that such data collection is not possible even for higher levels of government; hence to expect it at the level of local bodies, while laudable, is far too ambitious.

It has also been pointed out, not only in the context of public goods provision, but more generally, that a broad division between revenue (current) expenditure and capital expenditure will also be indicative of the efficiency of an ULB. While we agree that this indeed true, and the dominance of revenue expenditure over capital expenditure is a problem that afflicts all levels of government, at the moment such division of expenditure is not available the level of local bodies.

It was pointed out earlier that mere spending on public goods need not result in superior service delivery. It should be clear that we are using expenditure on public goods as a proxy in the absence of data on actual service delivery. However, we would like to make a strong recommendation for collection of data on actual provision of public goods by each Corporation and Council. This actual provision must be compared to the minimum norms that are available from a variety of sources, such as MMRDA, Zakaria Commission, etc.

Given that a total of Rs. 400 crores are available for disbursement under the efficiency related criteria of which Rs. 50 crores are reserved for Performance, the amount available for efficiency is Rs. 350 crores. Of this amount 25 percent was reserved for ADMIN which left 75% for PG i.e. Rs. 262.5 crores. As before, this amount is distributed among classes of ULBs in the proportions determined earlier.

4.6 Sensitivity Analysis

In this sub-section we suggest examining the influence of a change in the weighting pattern of the various criteria that determine need-based allocations to districts and subsequently to ULBs. This exercise is important especially if one bears in mind that the weights set for the criteria are not sacrosanct and maybe changed according to the judgement of the user of the methodology developed here. We have set up some alternative weighting patterns and so as to enable comparison with the

devolution arrived from the initial weighting pattern. Table 4.3 below gives the weighting pattern under 4 different scenarios. We have also included the original weighting pattern used above for ready reference.

We do not report the details of the changes in allocations as a result of the changes in the weighting pattern. These details right down to the last municipal council are available in Karnik et al (2002).

TABLE 4.3
WEIGHTING PATTERN UNDER VARIOUS SCENARIOS

Criteria	Original Scenario	Scenario One	Scenario Two	Scenario Three	Scenario Four
DIST	0.150	0.050	0.150	0.150	0.150
BACK	0.150	0.250	0.150	0.150	0.150
UP	0.150	0.150	0.100	0.150	0.150
UA	0.200	0.200	0.250	0.200	0.200
MST-DIST	0.150	0.150	0.150	0.250	0.000
INMST	0.100	0.100	0.100	0.000	0.250
MCs	0.015	0.015	0.015	0.015	0.015
Council A	0.015	0.015	0.015	0.015	0.015
Council B	0.035	0.035	0.035	0.035	0.035
Council C	0.035	0.035	0.035	0.035	0.035
Note: Highlighted numbers show the changes in a particular scenario relative to the Original Scenario.					

5. DATA GAPS

An exercise such as the one carried out in the UNDP/UNCHS study and discussed conceptually in section 4 is highly data intensive. The more accurate and detailed the data, the better targeted are the disbursements likely to be. Such data will facilitate well-targeted disbursement on grounds of efficiency as well equity. While we have been able to obtain data of fairly good quality, which has made for a rich analysis, looking to the future of decentralization and disbursement of funds to strengthen ULBs, we are in a position to point out certain data gaps.

The ideal situation for targeting disbursements is the availability of detailed data at the level of the Local Body. This will include, apart from information on the financial performance of the Local Body, other “real” data, such as total income generated, population, area, poverty ratios, level of backwardness, quality of infrastructure (separately for water supply, sanitation, street lighting, etc). However, as we have found out during the course of our exercises, much of such “real” data are available only at the level of the districts while at the level of Local Bodies only financial data are available in detail. Even as far as some Local Bodies were concerned there were data gaps with respect to availability of financial data. This was more likely to be the case at the level of Category ‘C’ Class Councils.

The next step in the decentralization process is one where we go beyond the level of the ULB, i.e., beyond the MCs, Councils A, B and C. This would imply going to the level of wards within each ULB. While the concept of decentralization could logically extend to the ultimate unit in the jurisdiction, i.e., the citizen, practically we need to set some limits. These practical limits will have to be set by constitutional provisions relating to the decentralized unit. At the moment such provisions have been put in place up to ULBs only. Further, there are no provisions at the level of the state Acts which extend decentralization below the level of ULBs.

In spite of this, it remains a fact that functions of the ULB get decentralized to the ward level. Hence, we can say that actual service delivery takes place at the ward level and consequently the functioning of the wards should be a matter of concern to us. However, it needs to be borne in mind that wards or ward committees do not have functional autonomy and more importantly do not have financial autonomy. Wards have to function as per the dictates of the Chief Officer and Standing Committee of the ULB.

Despite the above, since actual service delivery takes place at the level of the wards and hence citizens’ welfare is crucially determined at this level, it would be important to assess the functioning of the wards. Naturally, for such a task to be undertaken far more detailed data would have to be available. This, however, is likely to be a formidable task: in Mumbai MC alone there are 23 wards and at the moment we do not even know how many wards there will be in other MCs and Councils. To

undertake the task of data collection at the ward level will be gigantic, however desirable the objective may be. We have not been able to collect any information beyond the level of the ULB. We do, however, strongly recommend that a pilot study for data collection at the ward level be instituted.

Bearing in mind the data gaps that we have discussed above, we would like to recommend that a centralized, autonomous agency for collection, analysis and updating of a variety of data.

6. CONCLUDING REMARKS

The purpose of this paper is to present a methodology for a systematic and transparent formula based disbursement of funds to ULBs. The methodology presented has had to innovate on the basic approaches of Central Finance Commissions disbursement procedures. However, there is one major difference, which has been pointed out: while the jurisdictional authority of the State government exactly matches the boundaries of the State this convenient state of affairs breaks down when one is concerned with disbursements below the level of State governments. Hence, we have devised a three step procedure that operationalized the proposed procedure. The procedure however makes significant demands on the data gathering mechanism. This is especially true if the extension of the procedure has to take into account actual service delivery by ULBs. Hence, it is our strong recommendation that not only the state of Maharashtra (which is the focus of this study) but other states should institute a permanent data collection machinery which will provide continuous inputs for the operationalization of the proposed procedure.

It has been pointed out that the methodology developed in this paper depends critically on the quality of data that are available⁴. There can be no disagreement on this issue. The better the quality of data, the better will be the results of the exercise. In fact, efforts to strengthen the data base of local bodies should be one of the major recommendations, not just from this paper, but from all efforts at deepening fiscal decentralisation. The point about excessive number of criteria in the need-based devolution scheme (see footnote 3 above) is well taken. However, given the diversity

⁴ This point was made at the JNU/UNDP/UN_HABITAT Workshop by numerous participants, especially, Professor Amitabh Kundu.

of Indian States and the diversity of local bodies within the States, we felt that offering as much flexibility, in form of a plethora of characteristics, to the users of the methodology was desirable. In specific instances, users can emphasise or de-emphasise certain characteristics by increasing or reducing (even setting equal to zero) the weights on the criteria. Our objective in this paper was to demonstrate the full capability of the method and leave it to the user to tailor the method according to local requirements.

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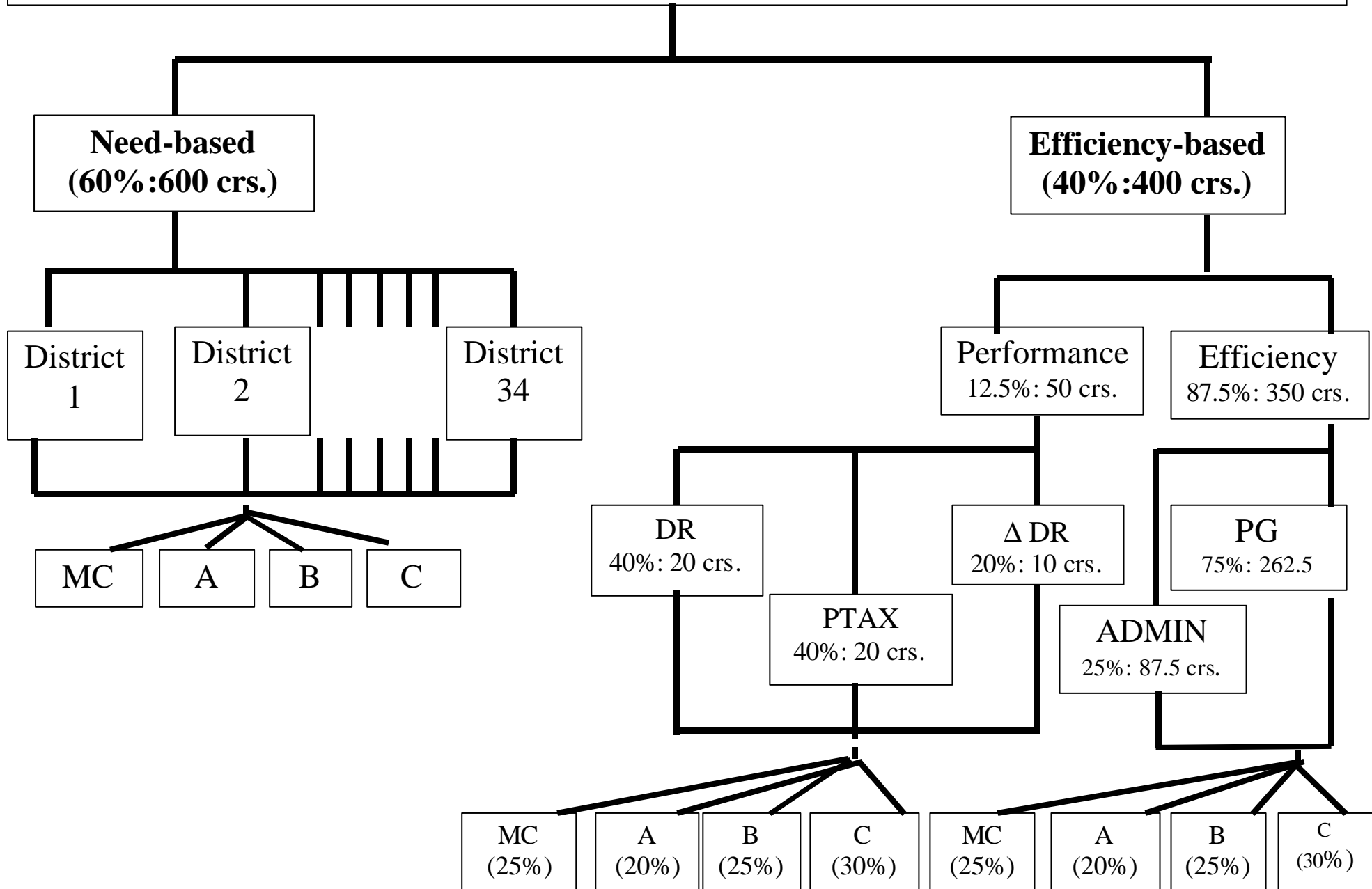
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