Improving the Fiscal Health of Indian Cities: A Synthesis of Pilot Studies

Report Submitted by the

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CHAPTER 1: COMPARISONS OF CHARACTERISTICS

Introduction

In this succinct report, our objectives are to compare and synthesize findings of five major Indian cities – Chennai, Delhi, Pune, Hyderabad, and Kolkata, which were contained respectively in NIPFP (2008), NIPFP (2007a), (2007b), (2007c) and (2007d). In this chapter, we compare broad characteristics of these urban agglomerations (UAs) which enable us to understand their revenue bases, expenditure needs and more generally their fiscal health. In general, in this chapter and in the discussion of expenditure gaps and comparisons (Chapter 2), we present a disaggregated picture of services and finances for the central city and the non-central city set of smaller ULBs, since the expenditure responsibilities and financial strength are different.[1]

This chapter is organized as follows: first, we compare and discuss socio-demographic characteristics of the five UAs, given their size and other related factors have a bearing on scale economies and the delivery of public services. Wherever possible we highlight the role of the central city in these UAs, given the relative attractiveness of the central city vis-à-vis the other areas to businesses or residents reveal quite a lot about their fiscal bases. Once we have compared the economic bases of the cities, we examine their relative physical features, which impact the costs of service delivery directly. Next, based on information from the Census of India 2001 town directory, we summarize the cities' education—availability of primary schooling and institutions of higher education. After this general overview, we attempt to explain the physical level of service delivery in the UAs of our interest. Here we focus on the same services that we present the expenditure needs for, namely, water supply and sewerage, municipal roads and street lighting. For solid waste and sanitation, we were unable to find reliable data in the Census of India 2001 town directories, hence we do not discuss them. The chapter concludes by summarizing and providing a road map for the report.

Population and Socio-Demographic Characteristics

Table 1.1 summarizes some basic characteristics such as land area, population, population density and households for the UAs of interest. Clearly, as Table 1.1 shows, Delhi is

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[1] For future reference in this report, in the case of Delhi UA, central city is the Municipal Corporation of Delhi, in the case of the Kolkata, central city is the Kolkata Municipal Corporation, in Pune UA, central city is the Pune Municipal Corporation, in Chennai UA, it is the Corporation of Chennai, and in the case of Hyderabad UA, central city is the erstwhile Municipal Corporation of Hyderabad (MCH), now the Greater Hyderabad Municipal Corporation (GHMC). However our data for Hyderabad UA spans only the erstwhile MCH as the central city, with the other ULBs being considered the non-central city set of ULBs.

the largest of them all followed by Pune in terms of land area. In terms of population and the number of households as well, Delhi leads the pack, but population density is the highest in the Kolkata UA, where there are nearly 13,850 persons per square kilometre, compared with the 6,000 of Delhi. This means that while Delhi is larger and more populous, local bodies in the Kolkata UA have a huge responsibility to provide public services.

Chennai was the one to document the highest growth rate of population during 1991-2001. However, population density is also comparatively lower in Chennai UA, when compared with that in Kolkata UA.

Table 1.1: Socio Demographic Characteristics Across UAs, 2001

Urban Agglomeration	Area (in Sq. Km.) (Average (Maximum, Minimum) of the ULBs)	Households, 2001 (Average (Maximum, Minimum) of the ULBs)	Population 2001 (Average (Maximum, Minimum) of the ULBs)	Growth rate 1991-2001 (Average (Maximum, Minimum) of the ULBs)	Density (Persons per sq.km) (Average (Maximum, Minimum) of the ULBs)
Hyderabad UA	68.39 (172.7, 18)	97,322.09 (660,363, 19,748)	505,236 (3658510, 94372)	71.38 (116.82, 20.42)	5,722.18 (20917, 1565)
Chennai UA	47.03 (174, 17.2)	156,892.63 (962,213, 174,145)	700,154 (4343645, 76093)	187.74 (1118.81, 16.8)	6,001.45 (9910.41, 249.6)
Kolkata UA	25.72 (186.23, 4.42)	63,022.44 (931,402, 6,772)	303,554 (4580546, 33858)	48.07 (459.55,-1.23)	13,854.33 (38337.35, 1834.93)
Delhi UA	494.33 (1397.29,42.74)	1,113,972.33 (3,247,838, 25,045)	3,702,137 (10679152, 124917)	28.59 (48.2, -1.06)	5875 (7643, 2907)
Pune UA	132.72 (430,13.23)	165,554.80 (555,771, 9,773)	751,061 (2,538,473, 46,921)	33.96 (95.8, -2.65)	4,952.41 (5938.25, 1303.36)
Average, all	**153.64**	**319,352.86**	**1,192,428.40**	**73.95**	**7281.07**

Source: Census of India Town Directory, 2001, and Authors' Computations.

In the case of Kolkata UA, taking into account all the (41) ULBs, on average, the land area is very low, only 25.72 sq. km., but the area of the central city (Kolkata) is 186.23 sq. km. which is almost same as the area of the central cities in Hyderabad and Chennai UAs, which have much higher average land areas (of 68 and 47 sq. km. respectively). This implies that the central city in the Kolkata UA is burdened with high density.

Table 1.2 presents this socio demographic information for central cities in these UAs. According to Census 2001, the land area, population and the number of households was the highest in the Municipal Corporation of Delhi, the central city in Delhi UA, with population density being the highest in Kolkata Municipal Corporation, followed by that in the Municipal

Corporation of Hyderabad. This suggests that there could be scale economies in the provision of services such as water supply in the central city of Kolkata UA.

Table 1.2: Socio Demographic Characteristics, Central Cities of All UAs, 2001

Central City	Area (in Sq. Km.)	Households	Population 2001	Population growth, 1991-2001	Density, 2001
Hyderabad Municipal Corporation	172.7	660,363	3,658,510	20	20,917
Chennai Municipal Corporation	174	962,213	4,343,645	13	250
Kolkata Municipal Corporation	186	931,402	4,580,546	4	24,596
Delhi Municipal Corporation	1,397.29	3,247,838	10,679,152	48	7,643
Pune Municipal Corporation	430	555,771	2,538,473	62	5,903
Average, all	**472**	**1,271,517.40**	**5,160,065.20**	**29.40**	**11,861.80**

Source: Town Directory, 2001and Authors' computations.

Economic Base

The economic base of cities has implications for their revenue raising capacity as well as their expenditure needs. Some cities are more industrial and could be more polluting than others, but they might also imply a larger revenue base. Table 1.3 summarizes the economic base of the central cities of the five UAs of interest.

Table 1.3: Economic Profile of Central Cities, All UAs, 2001

Central City	Most Important Commodities Manufactured	Most Important Commodities Imported	Most Important Commodities Exported
Municipal Corporation of Hyderabad	Metal products	NA	Computer software
Corporation of Chennai	Railway coaches	Iron	Readymade Garments
Kolkata Municipal Corporation	Engineering goods	Machinery parts	Leather
Municipal Corporation of Delhi	Textile	Coal & cock	Metal products and parts machinery and transport parts
Pune Municipal Corporation	Electronic goods	Cloth	Machinery

Source: Town Directory, 2001and Authors' computation.

Table 1.3 shows that the central cities of all the UAs have a predominantly manufacturing base, which explains agglomeration and the formation of these cities. We assume that the economic base of the peripheral areas in the UAs will not be significantly different from that in the central cities. Even if they are, we assume that they are not of great interest. This is because

literature shows that central cities are the engines of growth of metropolitan areas (see Voith (1992) for instance). If the central cities thrive, the metropolitan area will do well. But if the economic and fiscal health of the central city is poor, then the ability of the metropolitan area to be an engine of economic growth would be undermined.

Physical Characteristics

Table 1.4 reviews the physical characteristics of the five UAs of interest, since the relative dryness of an area has implications for the provision of public services such as water supply. Low rainfall increases the cost of provision of water supply. Table 1.4 summarizes the average rainfall, average maximum temperature and minimum temperature and the temperature differences of the central cities of the five UAs of interest. We assume that the central city will not be significantly different from the other ULBs in the UA, as far as these characteristics are concerned. Clearly, Kolkata and Chennai receive above average rainfall, and also have greater than average maximum temperature, whereas Delhi, Pune and Hyderabad are rain deficient. Kolkata also has the maximum temperature differences between the summer and winter months. This suggests that ULBs in Chennai and Kolkata UAs are expected to have better storm water drainage and sewerage systems, and that there could be a lot of seasonal variation in water supply. However, the cost of water provision may be higher or lower, depending on the distance from the water source and the costs of electricity.

Table 1.4: Physical Features: Central Cities of All UAs, 2001

Central City	Average rainfall (in millimeters)	Average maximum temperature (in centigrade)	Average minimum temperature (in centigrade)	Difference between maximum & minimum temperature
Municipal Corporation of Hyderabad	839.60	40.7	19.3	21.4
Corporation of Chennai	1,413.20	37.5	19.8	17.7
Kolkata Municipal Corporation	1,650.00	38	12	26
Municipal Corporation of Delhi	771.47	31.1	19.8	11.3
Pune Municipal Corporation	721.70	32	18	14
Average, all	**1,079.19**	**35.86**	**17.78**	**18.08**

Source: Town Directory, 2001, and Authors' Computations.

Education

The provision of primary education is one of the responsibilities for some of the urban local bodies (ULBs). In Delhi and Pune, providing primary and secondary education is the responsibility of ULBs. In Chennai, Hyderabad and Kolkata, the provision of primary and

secondary education are the responsibility of state governments. The 2001 town directory consists of information regarding the number of primary, secondary and middle schools by town.

Table 1.5 summarizes this and the population coverage by schools in the selected UAs. In all UAs, the central city has a much higher number of schools compared to the smaller ULBs, to be expected. Population coverage with schools is also higher in the central city (in the case of Chennai and Kolkata UAs). However, in the Delhi, Pune and Hyderabad UAs, on average, population coverage with schools is higher in the smaller ULBs than in the central city. Taking into account their expenditure responsibility, it does appear that the smaller ULBs in Delhi and Pune UAs have done a relatively good job of providing their population with schools.

Table 1.5: Number of Schools and Population per School Across UAs, 2001

Urban Agglomeration	Central city		Non Central City	
	Total Number of Schools	Population per School	Average Number of Schools (Maximum, Minimum of ULBs)	Average Population per School (Maximum, Minimum)
Hyderabad Urban Agglomeration	2,971	1,231	194.20 (342, 94)	1,059.89 (2192.57, 601.10)
Chennai Urban Agglomeration	2,524	1,721	58.29 (104, 15)	4,249.55 (9752.47, 1619)
Kolkata Urban Agglomeration	2,056	2,228	35.70 (669, 0)	12,268.34 (38863, 0)
Delhi Urban Agglomeration	6,593	1,512	252.00 (413, 91)	902.84 (989, 817)
Pune Urban Agglomeration	983	2,582	114.75 (311, 30)	1,903.60 (3256, 1111)
Average	**3,025.40**	**1,854.80**	**130.9**	**4,076.84**

Source: Town Directory, 2001, and Authors' computations.

While primary education and the availability of schools is indicative of literacy, higher education is representative of the awareness of the public and plays a role in their ability to discern between good and bad quality of public services. In Table 1.6 we report the number of colleges and population coverage with colleges. We examined the availability of the number of colleges (including arts, science, commerce, law, engineering, polytechnic and medical colleges), universities, and other colleges offering degrees, in the five UAs of our study, and disaggregated them by central city and the smaller ULBs.

As with schools, table 1.6 shows that central cities have the largest number of colleges in all the UAs. Among the central cities, Hyderabad has the highest number of colleges followed by Pune. On average, population coverage with colleges is also much better in the central cities than in the smaller ULBs, with Pune's central city (Pune Municipal Corporation) being the best in terms of population coverage. The national capital Delhi is the most inadequate in terms of

population coverage with colleges especially in the central city. For Delhi's central city (the Municipal Corporation of Delhi), there is a college for 94,049 persons, but it is better for the other ULBs in the Delhi UA, where there is a college for 18,738 persons. In the Kolkata UA, the number of colleges as well as population coverage is quite low for central as well as non central cities. In Pune, Hyderabad and Chennai the population coverage with colleges is much better in the central city than the average. But Hyderabad's smaller ULBs are much worse as far as population coverage with colleges is concerned. This implies that the central city in Delhi, the non-central city set of ULBs in Hyderabad, and both the central and non-central cities in the Kolkata UA are likely to be less aware of the pressing need for good quality public services. Such public cannot contribute to any debate or discourse on the quality of public services in their cities.

Table 1.6: Number of Colleges and Population per College Across UAs, 2001

Urban Agglomeration	Central city		Non Central City	
	Total Number of Colleges	Population per College	Average Number of Colleges (Maximum, Minimum of ULBs)	Average Population per College (Maximum, Minimum)
Hyderabad Urban Agglomeration	182	20,102	5.00 (11, 1)	63,928.22 (1,63,115, 19171)
Chennai Urban Agglomeration	132	32,906	2.14 (7, 0)	35,525.18 (1,036,655.67, 0)
Kolkata Urban Agglomeration	82	55,860	1.10 (9, 0)	85,526.18 (385266, 0)
Delhi Urban Agglomeration	106	94,049	4.50 (9,0)	18,738.39 (37,477, 0)
Pune Urban Agglomeration	175	14,506	4.75 (12,0)	32,547.06 (84,373, 0)
Average, all	**135.40**	**43,484.60**	**3.50**	**47,253.01**

Source: Town Directory, 2001and Authors' computations.

After having summarized the socio-demographic characteristics of the UAs along with their physical features, economic base and the availability of education infrastructure, we next make an attempt to study and understand the municipal infrastructure and public services in place in these UAs. We study water supply and sewerage, municipal roads and street lighting, frequently used as an indicator of safety again by central city and the other, smaller ULBs within UAs of our study.

Water Supply & Sewerage

Table 1.7 summarizes the water supply sources and sewerage system in the UAs of our study. This table shows that in the central cities of all UAs there is a water supply network, with the tap being the most common water supply source followed by tube-wells. This is true with

most non-central city ULBs as well. As far as sewerage is concerned, the central cities of all UAs have a sewerage network, along with open surface drains. This is true of the non-central city ULBs with the exception of Chennai UA, where there are primarily open surface drains.

It is not quite clear why, even with the near complete coverage of their cities with water supply and sewer networks, these cities are unable to provide the desired physical level of services, as was clear in the discussion of the physical level of services in NIPFP (2008), NIPFP (2007a), (2007b), (2007c) and (2007d).

Table 1.7: Water Sources and Sewerage Systems Across UAs, 2001

Urban Agglomeration	Sewerage		Sources of Water	
	Central City	Non-Central City (Proportion of Sources)	Central City	Non-Central City (Proportion of Sources)
Hyderabad Urban Agglomeration	S, OSD	S, OSD (20%); OSD(70%); BSD(10%)	T, TW	T (60%); T, TW (30%); TW,T (10%)
Chennai Urban Agglomeration	S	OSD (100%)	TW,T	TW (28.5%); T (28.5%); W (43%)
Kolkata Urban Agglomeration	S, OSD	S, OSD (10%), OSD (63%); OSD, S(10%);OSD,BSD(5%);S (3%), OSD,O (5%), S,PT (3%), O(3%)	T,TW	T,TW (73%); TW,T (13%); T (5%); TW (8%); TW,TK(3%)
Delhi Urban Agglomeration	NA	S (100%)	T,TW	T,TW (100%)
Pune Urban Agglomeration	S	S (50%), S/OSD (50%)	T	T (50%); TW/T (25%); TW/T/W/TK (25%)

Notes: S-Sewer network; OSD-Open Surface Drain; BSD-Box Surface Drain; Pt-Pit system; and O-Other types of sewerage. T-Tap water; TW-Tube well; W-Well water; and TK-tank water.

In the case of the central city, T, TW means that the tap was the most commonly used water supply source, followed by the tube-well, whereas TW, T means the tube-well was the most common water supply source followed by the tap. This is similarly defined for sewerage system for central cities. For the non-central cities, the "proportion of sources" means the proportion of ULBs (among the non-central city set of ULBs) which listed tap or tube-well as their main source of supply. The proportion of sources is similarly defined in the case of sewerage networks for non-central cities.

Source: Town Directory, 2001and Authors' computations.

Municipal Roads & Lighting

Table 1.8 summarizes the length of roads, road length per thousand population, by central city and the non-central city set of ULBs for the UAs of interest, based on information from Census 2001 town directories. For all the UAs, while road length in the central cities is higher in absolute terms than in the other ULBs, the road length per thousand population is almost always better in the smaller ULBs. By far, of all, the UA with the maximum length of pucca (paved) roads is Hyderabad. For instance, while in the Municipal Corporation of Hyderabad, the length of pucca roads is 7,130 km, against an average of only 3,098 km of pucca road length for all UAs. For the non central cities in the Hyderabad UA, the average pucca road length is only 186.40 km,

also higher than the average for non central cities. However road length per 1,000 population is a meager 0.19 in the central city of Hyderabad when compared with 1.42 in the smaller ULBs on average. This suggests that central cities have inadequate roads when compared with the needs imposed on them with increasing population pressure.

Table 1.8: Road Length & Road Length per Thousand Population, All UAs, 2001

Urban Agglomeration	Central City		Non Central City [Average (maximum, minimum) of ULBs]	
	Pucca Road Length	Road Length per Thousand Population	Pucca Road Length	Road Length per Thousand Population
Hyderabad Urban Agglomeration	7,130.00	0.19	186.40 (425, 32)	1.42 (2.05, 0.45)
Chennai Urban Agglomeration	2,920.65	0.70	144.28 (421.7, 14)	0.85 (1.37, 0.06)
Kolkata Urban Agglomeration	1,585.00	0.41	145.75 (476, 10)	1.17 (5, 0)
Delhi Urban Agglomeration	NA	NA	NA	NA
Pune Urban Agglomeration	760.06	0.34	214.43 (641.92, 40.8)	1.08 (2.34, 0.53)
Average, all	**3,098.93**	**0.41**	**172.72**	**1.13**

Source: Town Directory, 2001, and Authors' computations.

In the case of street lights, we observe a similar picture. Table 1.9 summarizes the number of street lights, and household coverage with street lights for central cities and non-central cities of the various UAs of our study. In absolute terms, the central cities in Pune and Chennai UAs have above average number of street lights, with household coverage in Pune being the best, at 9 households for every street light, but not so in the central city. Kolkata's central city is the worst both in terms of absolute number of street lights and the household coverage. When we study street lights and their coverage in the non central city set of ULBs, we find that given the data, smaller ULBs in the Hyderabad UA provide the best coverage. The worst providers of street light coverage for households are the smaller ULBs in the Chennai UA, casting doubt on their ability to attract residents and firms, and their ability to broaden their revenue base and potential.

Summarizing, in terms of public services, the UAs of the study are fairly well covered with water supply and sewerage networks. The central cities do have the greatest pucca (paved) road length, but this is inadequate when their demand is taken into account. The smaller ULBs have much better coverage with their pucca roads. As far as street lights are concerned, the data

do appear to vary a lot, with the UAs differing from each other greatly as far as central cities and smaller ULBs are concerned. The Kolkata Municipal Corporation is the worst central city and the smaller ULBs in the Chennai UA are the worst from the viewpoint of coverage of households with street lights. In the forthcoming chapters, we make an attempt to examine expenditure norms pertaining to each of these services and try to understand if service delivery depends on finances or spending on the relevant services.

Table 1.9: Provision of Street Lights and Household Coverage, All UAs, 2001

Urban Agglomeration	Central City		Non Central City [Average (maximum, minimum) of ULBs]	
	Number of Street Lights	Households per Street Light	Number of Street Lights	Households per Street Light
Hyderabad Urban Agglomeration	18138	36.41	6368.67 (10300, 1465)	11.82 (44.51, 2.55)
Chennai Urban Agglomeration	79303	12.13	5922 (17606, 25)	199.75 (1350.36, 4.18)
Kolkata Urban Agglomeration	472	1,973.31	3408.83 (12000, 55)	20.81 (181.00, 3.00)
Delhi Urban Agglomeration	NA	NA	NA	NA
Pune Urban Agglomeration	59,001	9.42	2323.25 (4,000, 739)	82.34 (313, 4)
Average, all	**39,228.50**	**507.82**	**4,505.69**	**78.68**

Source: Town Directory, 2001, and Authors' computations.

The rest of this report is organized as follows. Chapter 2 summarizes expenditures on various services and the associated expenditure gaps across the UAs of study, disaggregating the summaries by central city and the other smaller ULBs. Chapter 3 compares and summarizes the revenue bases, their components, and their capacities, while Chapter 4 discusses fiscal health for the five UAs of our study, and contains concluding remarks.

CHAPTER 2: COMPARISON OF EXPENDITURE AND EXPENDITURE GAPS

In this chapter, we compare and discuss the findings from our study of expenditures and expenditure gaps by service for the five metropolitan areas of our study contained in NIPFP (2008), NIPFP (2007a), (2007b), (2007c) and (2007d). We focus on water supply and sewerage/drainage, solid waste and sanitation, municipal roads, street lights, and the sum of all these services. We attempt to do this in a manner that reveals the big picture without compromising on the smaller details.

First we focus on comparison of expenditures by service across cities and then we compare and discuss expenditure gaps for individual services, all relevant services and all relevant services excluding water supply and sewerage, taking into account expenditure responsibility. The chapter finally concludes.

Water Supply and Sewerage

We make the comparisons of expenditure and gaps on all services including water supply and sewerage, separately for the central cities of the metropolitan areas and the non-central city counterparts, as their expenditure responsibilities are different. In Delhi, Chennai and Hyderabad, the metropolitan water boards provide water supply and sewerage, whereas in Pune and Kolkata, the municipal corporations are responsible for this service. Table 2.1 summarizes the actual per capita expenditures on water supply and sewerage in per capita terms, across the metropolitan areas of the study. It presents the average per capita expenditure over 1999-00 to 2005-06 in real (in 1999-00) terms by central city and the non-central city set of ULBs in every UA we study.[2]

On average, the central cities of the metropolitan areas considered for this study spend Rs.235 per capita (in constant 1999-00 prices) on water supply and sewerage. Later when discussing expenditure gaps we compare these actual expenditures with widely accepted norms. At the moment, we note a quite interesting finding in Table 2.1 which is that in Pune UA, where the city has the responsibility of providing water supply and sewerage, along with other services, the central city (Pune Municipal Corporation) is the highest spender on water supply and sewerage on average, in per capita terms. This is high when we compare it with the spending of cities such as Delhi, Hyderabad and Chennai where their respective water boards are responsible for provision of this service. We do note the caveat that for Delhi UA, the expenditures reported

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[2] Specifically, for Kolkata UA, expenditures are available for the time period 1999-00 to 2003-04. For Pune & Chennai UAs, expenditures are for the time period 1999-00 to 2005-06. For Hyderabad and Delhi UAs, expenditures were available for the time period 1999-00 to 2004-05.

in the table are only for water supply, whereas for other UAs, the reported expenditures include that on water supply and sewerage.

Indeed, overall, on average, cities where the municipal corporation itself is entrusted with the responsibility of providing water supply (and sewerage) spend much higher (more than 1.5 times) than in cities where commercial utilities such as the Metro water boards provide this service. This is indeed intriguing because metro water boards are commercial entities that tend to have better financial resources by enforcing a quid pro quo relationship between water use and charge. The finding that cities in which non-municipal entities provide the service, actually spend

Table 2.1: Per Capita Expenditure on Water Supply and Sewerage/Drainage (in Rs. 1999-00 Constant Prices), All UAs

Urban Agglomeration	Central City [Average (maximum, minimum)]	Non Central City ULBs [Average (maximum, minimum)]	Number of Observations for Non Central City ULBs*
Pune Urban Agglomeration	506.64 (593.51,411.91)	100.27 (305.12, 8.83)	16
Delhi Urban Agglomeration	182.13 (524.27, 67.41)**	NA***	NA
Kolkata Urban Agglomeration	139.63 (226.13, 85.69)	15.36 (130.02, 0)	135
Hyderabad Urban Agglomeration	135.35 (164.56,108.97)	143.22 (393.45, 40.48)	31
Chennai Urban Agglomeration	214.42 (454.69,104.19)	20.6 (66.12, 0.21)	30
Average, all	**235.63**	**69.86**	**53**
Average, Non-Municipal Provider Cities (Delhi, Hyderabad & Chennai)	**177.30**	**81.91**	**30.5**
Average, Municipal Providers (Pune & Kolkata)	**323.14**	**57.82**	**75.5**

Sources: Individual ULBs in the Various UAs and Authors' Computations.

*The reader should recall that in the case of non-central cities, the number of observations is not indicative of the number of local governments, but of the number of periods for all the local governments for which we had the data.

** For Delhi UA this expenditure is only on water supply. For other UAs, the given expenditures are for both on water supply and sewerage.

*** In the case of Delhi, all data we had was only for the Municipal Corporation of Delhi, the central city. We did not get relevant data (which we could deflate) for the other two local governments, the New Delhi Municipal Council (NDMC) or the Delhi Cantonment Board.

lower than they are in municipality service provider cities, is actually consistent with the findings of Sridhar, Mathur and Nandy (2006) as well. As they point out, this could be either a reflection

of the fact that non-municipal bodies are more efficient in the delivery of their services or that they spend too little per capita. There appears to be greater support for the latter since Sridhar, Mathur and Nandy (2006) find the average per capita per day volume of water supply was also higher in the municipality service provider cities than in the non-municipal counterparts. Here we did not have systematic time-series data on the physical level of the service in the central city and the other smaller local governments, hence are unable to comment further.

When we examine the real expenditures on water supply by the non-central city set of ULBs in all the UAs of our study, we find a lot of variation. On average the spending of the non-central city set of ULBs is much lower than that of the central cities, as we would expect. Further, at Rs.57.82 per capita, we note that the municipal provider set of ULBs are unable to spend adequately when compared with that by their central city counterparts, at Rs.82 per capita. Here in the case of non-municipal provider set of cities, only in the case of Hyderabad UA, the Hyderabad Metropolitan Water Supply and Sewerage Board (HMWSSB) serves areas other than the central city. However in the case of all other UAs, the provision of water supply by the metro water board is limited to the central city.[3] Despite this, note the average of spending for the non-central city set of ULBs in the non-municipal provider set of cities is in fact higher than it is in the case of the non-central cities in the municipal provider cities. This is biased because of Hyderabad, where the water board provides services to the other ULBs as well, with the formation of the Greater Hyderabad Municipal Corporation (GHMC). In this sense, the non-central city set of ULBs in most UAs are really hard-pressed for funds to spend on even basic services such as water supply and sewerage, especially when they are not covered by the metropolitan water boards.

Solid Waste and Sanitation

While solid waste management deals with street cleaning, sanitation deals with infrastructure relating to toilet facilities. Given these services are defined differently in the case of different cities, in the interests of consistency and comparison, we had to consolidate data on these two services.[4]

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[3] In the case of Delhi, the Delhi Jal Board serves only the population of the Municipal Corporation of Delhi (MCD). The other ULBs, the New Delhi Municipal Council (NDMC) and the Delhi Cantt buy water in bulk from the DJB. In the case of Chennai, the Corporation of Chennai is the only part effectively served by the Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB). The other ULBs in the Chennai UA do deposit funds with the CMWSSB for executing their capital projects, but it is paid for by them, with only the technical expertise being provided by the CMWSSB.

[4] For Kolkata and Delhi UAs, there was no expenditure on sanitation or that on solid waste management heads. For Pune and Hyderabad UAs, expenditure on sanitation & solid waste management was under a single head. For Chennai UA, expenditure on sanitation & solid waste management were under different heads, and we added them for purposes of comparison.

Given these data caveats, Table 2.2 summarizes across cities the actual per capita expenditure on solid waste and sanitation in real (1999-00 prices) terms, and represents the average over the time period of our study (see footnote 1).

Table 2.2: Per Capita Expenditure on Solid Waste Management & Sanitation (in Rs. 1999-00 Constant Prices), All UAs

Urban Agglomeration	Central City [Average (maximum, minimum)]	Non Central City ULBs [Average (maximum, minimum)]	Number of Observations for Non Central City ULBs*
Pune Urban Agglomeration	130.94 (141.45, 122.77)	205.63 (352.62, 123.12)	17
Delhi Urban Agglomeration	186.03 (209.90, 157.99)	NA	NA
Kolkata Urban Agglomeration	127.38 (225.27, 2.30)	52.24 (132.47, 0.45)	135
Hyderabad Urban Agglomeration	151.14 (159.12, 146.04)	40.94 (94.46, 1.6)	27
Chennai Urban Agglomeration	7.25 (19.28, 0.08)	186.25 (471.25, 6.68)	37
Average, all	**120.55**	**121.27**	**54**

Sources: Individual ULBs in the Various UAs and Authors' Computations.

A surprising finding from Table 2.2 is that on average, over the time period of the study, there is no significant difference in spending on a basic service like solid waste management or sanitation, across the central and non-central cities of the UAs. In fact, the non-central city set of ULBs spend a little more on average on this service than the central cities. This finding is difficult to explain, this could be an artifact of the data, which is that the spending on this service in the central city was not available for the Kolkata UA. The only UA in which the central city is able to spend more on this service than the non-central city set of ULBs is the Hyderabad UA, where the central city spent more than 3.5 times that by the non-central city set of ULBs.

In the case of Pune UA whose central city is a high spender in the case of water supply, the central city is a low spender in the case of solid waste and sanitation, not necessarily in relation to the average, but when compared with the central city of the Hyderabad UA (Municipal Corporation of Hyderabad). In fact it is the non central city set of ULBs in Pune UA which spend more on average on this service. In the case of Chennai, we find a similar phenomenon. It is possible that in the case of cities which are burdened with the task of having to provide a wide range of services including water supply and sewerage (as in the case of Pune UA), water supply being the most important, spending on water supply and sewerage, takes precedence over the others. In the case of the non-central cities of the Pune UA, moreover, we observe a number of cantonment boards which have broader revenue bases than municipal corporations, given they

come under the jurisdiction of the Ministry of Defense, Government of India. In the case of Chennai, a non-central city ULB, Pallavaram spends substantially higher on solid waste and sanitation than the other ULBs, which explains the high spending for the non-central city set of ULBs there. Moreover, in the case of Chennai, the heads on expenditure on solid waste and sanitation were separate and we added them up. In the case of Hyderabad and Pune UAs, expenditures on solid waste and sanitation were under a single head. However, we did not find a systematic relationship between the high solid waste collection efficiency and high spending in the ULBs, which casts doubt on the relationship between finances and public service delivery.

Street Lights

The provision of street lights for safety is the responsibility of the city in most instances. Table 2.3 summarizes the per capita real expenditure on street lights in the case of all UAs of the study, with the exception of Delhi, where expenditures on street lights were combined with that on roads.

Table 2.3: Per Capita Expenditure on Street Lights (in Rs. 1999-00 Constant Prices), All UAs

Urban Agglomeration	Central City [Average (maximum, minimum)]	Non Central City ULBs [Average (maximum, minimum)]	Number of Observations for Non Central City ULBs*
Pune Urban Agglomeration	58.36 (70.71, 46)	66.41 (77.58, 43.01)	4
Delhi Urban Agglomeration*	95.97 (104.39, 80.05)	NA	NA
Kolkata Urban Agglomeration	NA	8.40 (32.36, 0)	125
Hyderabad Urban Agglomeration	53.55 (74.91, 31.05)	2.2 (5.02, 0.01)	20
Chennai Urban Agglomeration	NA	23.18 (58.29, 1.26)	30
Average, all	**69.29**	**25.05**	**44.75**

Sources: Individual ULBs in the Various UAs and Authors' Computations.

* In the case of Delhi UA, the central city *i.e.,* MCD, spends its expenditure on street lights & roads under a single head. So for Delhi the reported per capita expenditure on street light is actually per capita expenditure for roads & street lights together.

Here, along with the data caveats, the story is the same as with other services. On average, over time, the central cities of the UAs spend more than the non-central city set of ULBs on this service, in real terms. Pune being an exception, the central city and the non central city ULBs spend almost the same, given the cantonment board status of the non-central city of ULBs, and the large municipal corporation (Pimpri-Chinchwad Municipal Corporation) included in the set of non-central city ULBs. In the case of all UAs for which we have information on spending both by the central city and the non-central city set of ULBs, clearly, the central city emerges the

winner in terms of spending, as in the case of Hyderabad. Here there is a huge disparity in spending on street lights, where the central city spends on average nearly 25 times more than the non-central city set of ULBs on this service. However, this is for the erstwhile Municipal Corporation of Hyderabad, with the Greater Hyderabad Municipal Corporation now coming into existence, it is possible that such deficiencies in spending can be bridged.

Of the central cities, the highest per capita spender on street lights is Delhi, at Rs.96 per capita, but with the caveat that this includes revenue spending on municipal roads as well. Apart from Delhi, the other high spender on street lights is Pune followed by Hyderabad. Among the non-central city set of ULBs, the highest average spender is Pune, dominated mostly by the cantonment boards. Apart from this, the other high spender is the set of ULBs in the Chennai UA, where there are many progressive municipalities such as Alandur which are quite innovative in their financing of service delivery.

Roads

While there are many different kinds of roads including those constructed and maintained by the national and state-level authorities, we take into account only revenue spending on municipal roads. Because Delhi's road spending is included with that on street lights, we exclude that from Table 2.4 which summarizes per capita expenditure on roads by all UAs in the study.

Table 2.4: Per Capita Expenditure on Roads (in Rs. 1999-00 Constant Prices), All UAs

Urban Agglomeration	Central City [Average (maximum, minimum)]	Non Central City ULBs [Average (maximum, minimum)]	Number of Observations for Non Central City ULBs*
Pune Urban Agglomeration	37.02 (46.53, 28.47)	140.24 (354.79, 40.5)	19
Kolkata Urban Agglomeration	78.42 (131.70, 49.16)	16.39 (90.67, 0)	135
Hyderabad Urban Agglomeration	77.21 (96.03, 55.15)	5.20 (14.75, 1)	25
Chennai Urban Agglomeration	NA	12.26 (61.10, 0.13)	23
Average, all	**64.22**	**43.52**	**50.5**

Sources: Individual ULBs in the Various UAs and Authors' Computations.

Pune is again dominated by the fact that the cantonment boards spend well above that of the central city on roads, in average per capita real terms. However in the case of Hyderabad, and also on average, taking into account all UAs, the central city is a better spender on municipal roads when compared with their non-central city counterparts. Hyderabad is thus a good

illustration of the disparity between the central city and other ULBs in terms of spending on service delivery, in the case of most services we have studied here.

Expenditure on All Relevant Services

We aggregated the O&M and/or revenue expenditures of all the UAs on all the services we have studied here, namely water supply and sewerage, solid waste and sanitation, street lighting and municipal roads. The results are summarized in Table 2.5. This table reinforces what we have learned from the sections on each of the individual services, that the central city on average is able to spend more on essential services than the non-central city set of ULBs.

Table 2.5: Per Capita Expenditure on all Relevant Services (in Rs. 1999-00 Constant Prices), All UAs

Urban Agglomeration	Central City [Average (maximum, minimum)]	Non Central City ULBs [Average (maximum, minimum)]	Number of Observations for Non Central City ULBs
Pune Urban Agglomeration	732.97 (831.81, 630.11)	476.78 (713.7, 288.9)	16
Delhi Urban Agglomeration	420.09 (845.48, 255.95)	NA	NA
Kolkata Urban Agglomeration	395.33 (621.40, 203.60)*	133.97 (302.21, 1.62)	135
Hyderabad Urban Agglomeration	370.28 (452.91, 136.02)	184.48 (413.33, 43.95)	31
Chennai Urban Agglomeration	221.67 (458.41, 123.47)	96.11 (345.58, 2.4)	35
Average, all	**428.07**	**184.48**	**54.5**

Sources: Individual ULBs in the Various UAs and Authors' Computations.

* In the case of Kolkata UA, for the central city there, the Kolkata Municipal Corporation, we did not have data on expenditure incurred on street lights.

On average, the ratio of central city spending on the relevant services studied here is roughly twice when compared with that by the non central city set of ULBs. The disparity between central city and other cities spending is the most in Hyderabad UA where the central city spent roughly three times more than that of the non-central city ULBs on the relevant services. Such disparity in spending within jurisdictions within an UA, while displaying the relative financial strength of the central vis-à-vis the other ULBs, can spin off "voting with the feet" and enable cities to centralize (see Sridhar (2007), Mills and Price (1984), Mieszkowski and Mills (1993)). This is the case if spending on a service indicates a high level of the service as well. But it is possible that high spending, as we have argued, could be a sign of inefficiency, a reflection of the high costs a city is faced with, rather than always implying a high level of the service. If the high spending is a reflection of household preferences, then a high level of spending in the central

city should encourage households and population to stay within the central city, other things remaining constant. Given we did not have systematic data on the physical level of the services in the various UAs, even in the Kolkata UA, where we attempted econometric work, we cannot say much further on this.

Comparison of Expenditure Gaps

In this part, we compare the *expenditure gaps* by service for all UAs in the study, by computing the difference between the *actual expenditures* and *expenditure needs*. Here we recall to the attention of the reader that expenditure needs in the context of the Kolkata UA was arrived at through *econometric work* by estimating expenditures as a function of various cost, efficiency and household preference factors, whereas for the other cities, expenditure gaps were *computed* in relation to a standard norm recommended to attain a certain physical level of the service, given the lack of time series data for a reasonable length of time for the other UAs. Hence this caveat should be remembered while we compare Kolkata's expenditure needs with the gaps for other UAs for each of the individual services and in the overall.

Expenditure Gaps: Water Supply and Sewerage

Table 2.6 summarizes expenditure gaps for water supply and sewerage in the UAs of our study, across the central cities and other ULBs. This table effectively shows that Pune UA is the only one in which the central city (the Pune Municipal Corporation) exhibits positive expenditure gap (implying surpluses) of Rs.136 per capita (in real terms), when compared against the norm recommended to attain anywhere between 115-210 LPCD (litres per capita daily) of water supply for cities of this size. However, even here, the non central city set of ULBs have negative expenditure gaps, implying that they do not adequately spend on a basic service like this. This is so despite the fact that most of these other ULBs in the Pune UA are either cantonment boards or a municipal corporation (Pimpri-Chinchwad Municipal Corporation).

For the Kolkata Municipal Corporation (central city of Kolkata UA), while data were available on *actual expenditures* on water supply and sewerage (see Table 2.1), since we were unable to include KMC in the econometric estimation, the *expenditure needs* were not computed. In the case of Delhi, we did not have information on other ULBs except the MCD, hence we are unable to make intra-UA comparisons there as well.

It is interesting to note that the cities in which the non-municipal entities provide water supply are the ones in which expenditure deficits are experienced. This is consistent with what we found regarding the expenditures also in general for the non-municipal entities (Table 2.1). Indeed it is those cities which have the responsibility of providing water supply that are able to spend above the required norms. As discussed in the Pune report, with its expenditure on water

supply and sewerage well above the norms, the city is able to ensure the availability of a high 260 LPCD of water to its residents, and with nearly 95 percent of the population and land area being covered by drainage and storm water networks. So it appears that there is some relationship between spending and service delivery there.

Table 2.6: Comparison of Expenditure Gaps for Water Supply & Sewerage, All UAs (in Rs. 1999-00 Per Capita Terms)

Urban Agglomeration	Central City [Average (maximum, minimum)]	Non Central City ULBs [Average (maximum, minimum)]	Number of Observations for Non Central City ULBs
Pune Urban Agglomeration	136.25 (223.12, 41.52)	-216.94 (-2.98, -301.24)	16
Delhi Urban Agglomeration	-46.32 (289.11, -162.74)	NA	NA
Kolkata Urban Agglomeration	NA	168.11 (266.80, -19.98)	132
Hyderabad Urban Agglomeration	-134.02 (-104.81, -160.40)	-86.45 (165.92, -187.05)	31
Chennai Urban Agglomeration	-35.70 (204.57, -145.94)	-171.23 (-125.59, -191.50)	30
Average, all	**-19.95**	**-76.63**	**59.33**
Average, Delhi, Hyderabad & Chennai	**-72.01**	**-128.84**	**30**
Average, Pune & Kolkata	**NA**	**-24.42**	**74**

Sources: Individual ULBs in the Various UAs and Authors' Computations.

Expenditure Gaps: Sanitation and Solid Waste

In the case of sanitation and solid waste, we have combined expenditures on solid waste and sanitation as explained earlier, in the section on comparison of expenditures, where cities maintained separate accounts on these heads.

Table 2.7 summarizes expenditure gaps for the UAs on these services, disaggregating by central city and the other ULBs. Table 2.7 shows that all UAs are faced with severe expenditure deficits as far as spending on solid waste and sanitation are concerned, when compared against the norms. The only instance in which there is an expenditure surplus as far as these services are concerned, is the non-central city set of ULBs in the Pune UA, which, as discussed earlier, are mostly either cantonment boards (being under the direct jurisdiction of the Ministry of Defense, Government of India), or are municipal corporations (Pimpri-Chinchwad Municipal Corporation). In fact the most severely stressed in the provision of solid waste management and sanitation is the smaller ULBs in the Kolkata UA, which suffer a deficit of nearly Rs.140 per capita, when compared against the norm. When translated into aggregate terms at their average population we projected, the deficit translates to an additional Rs.24.4 million on solid waste and sanitation

alone. This suggests that the non-plan transfers these ULBs have been receiving from the state government of West Bengal need to be substantially revised upwards, in the absence of buoyant sources of own source revenue. We have more to say regarding this in the final chapter when we assess fiscal health overall by comparing expenditure needs with revenue capacities.

Table 2.7: Expenditure Gaps, Sanitation & Solid Waste Management, All UAs (in Rs. Per Capita Terms, 1999-00 Prices)

Urban Agglomeration	Central City [Average (maximum, minimum)]	Non Central City ULBs [Average (maximum, minimum)]	Number of Observations for Non Central City ULBs
Pune Urban Agglomeration	-166.27 (-155.76, -174.17)	2.21 (169.30, -134.53)	17
Delhi Urban Agglomeration	-41.42 (-17.55, -69.46)	NA	NA
Kolkata Urban Agglomeration	NA	-138.31 (-62.09, -226.20)	135
Hyderabad Urban Agglomeration	-169.07 (-161.09, -174.17)	-97.29 (67.34, -214.26)	26
Chennai Urban Agglomeration	-260.12 (-248.09, -267.28)	-3.78 (278.47, -186.1)	37
Average, all	**-159.22**	**-59.29**	**53.75**

Sources: Individual ULBs in the Various UAs and Authors' Computations.

Hence it is a robust finding then that smaller ULBs of UAs, which are not municipal corporations and which are not independent (in the sense of cantonment boards) are fiscally severely stressed for meeting their basic expenditure needs. This is so despite the fact that in the case of these services, the non-central city set of ULBs spent on average a little more than the central cities in the UAs (with the exception of the Hyderabad UA). This does imply that the other ULBs, even despite the fact of their spending more than that of the central city, are unable to meet the norms recommended for cities of their size, assuming an average waste generation of 380 grams per capita per day. However, with the exception of the Pune UA, this level of waste generation is really conservative, as may have been clear from the individual city reports. Hence the level of norm required to meet full solid waste collection efficiency and adequate sewerage treatment (specific norm not suggested by the NIUA (1995) study) in real terms, and the expenditure gaps, should be viewed as being highly conservative.

When we study the expenditure deficits of central cities across the UAs, we find on average they suffer even more acutely than the other smaller ULBs. By far, the worst affected is the central city (Corporation of Chennai (COC)) in the Chennai UA, which faces an expenditure deficit of nearly Rs.260 per capita on solid waste and sanitation alone, which is a huge

requirement, taking into account the expenditure needs for ensuring adequate solid waste collection efficiency. Moreover, as we have discussed in the Chennai report, the COC's waste generation is much higher than what is implied by the norm, hence these estimates should be viewed as being highly conservative.

Expenditure Gaps: Municipal Roads

We examined expenditure gaps as far as operations and maintenance expenditures on municipal roads are concerned. Table 2.8 summarizes the expenditure gaps for municipal roads. Indeed the comforting fact is that on average, the central cities and the non-central city ULBs have an expenditure surplus as far as O&M on this service is concerned. On average, the magnitude of the expenditure surplus is not different across central cities and the other ULBs. A few observations are in order. First, in most of the cases where we had data, it is the smaller

Table 2.8: Expenditure Gaps for Municipal Roads, All UAs (in Rs.Per Capita Terms, 1999-00 Prices)

Urban Agglomeration	Central City [Average (maximum, minimum)]	Non Central City ULBs [Average (maximum, minimum)]	Number of Observations for Non Central City ULBs
Pune Urban Agglomeration	-2.00(7.51, -10.55)	116.34(333.5, 8.57)	19
Kolkata Urban Agglomeration	NA	-9.58(56.49, -27.97)	126
Hyderabad Urban Agglomeration	41.02(59.85, 18.96)	-16.62(-7.46, -21.21)	25
Chennai Urban Agglomeration	NA	-13.50(35.34, -25.63)	23
Average, all	**19.51**	**19.16**	**48.25**

Sources: Individual ULBs in the Various UAs and Authors' Computations.

ULBs that are fiscally stressed in operating and maintaining their municipal roads, with the exception of the Pune UA, which we have already discussed--they are either cantonment boards or municipal corporations. Second, the central cities appear to be better placed to meet the expenditures according to norms required for cities of their size. This is taking into account the fact that the norms for roads are the Zakaria committee norms updated to 1999-00 prices, developed by PricewaterhouseCoopers (2001) for towns in Chhattisgarh. Hence all associated data caveats apply. Smaller ULBs in the Kolkata UA are the least stressed in terms of required expenditures on this service, with the smaller ULBs in the Hyderabad UA being the most stressed. We did not have information on the extent of damage to the municipal roads in these cities due to lack of adequate spending on their operations and maintenance, hence are unable to comment further on this.

Expenditure Gap Comparisons: Street Lights

We compared expenditure gaps across UAs of our study as far as their expenditure on street lights are concerned, as with other services. Here, as with roads, the norms are based on PWC (2001) for a study they did for the government of Chhattisgarh, where they updated the Zakaria committee norms for cities of various sizes, to 2000-01 prices. As explained in the individual city reports, we converted the PWC norms into 1999-00 prices, using appropriate deflators for the districts in which the central cities and other ULBs of the UAs are located. Table 2.9 summarizes these expenditure gaps when we compare the actual expenditures of the ULBs with those norms recommended for towns of their size.

Table 2.9: Expenditure Gaps for Street Lights, All UAs, (in Rs.Per Capita Terms, 1999-00 Prices)

Urban Agglomeration	Central City [Average (maximum, minimum)]	Non Central City ULBs [Average (maximum, minimum)]	Number of Observations for Non Central City ULBs
Pune Urban Agglomeration	-17.63(-5.28, -29.99)	3.08(16.69, -11.45)	4
Delhi Urban Agglomeration	-6.74(1.68, -22.66)	NA	NA
Kolkata Urban Agglomeration	NA	-43.74 (-1.21, -89.52)	113
Hyderabad Urban Agglomeration	4.20(25.55, -18.31)	-38.44(-36.11, -41.01)	20
Chennai Urban Agglomeration	NA	-21.59(13.28, -43.75)	30
Average, all	**-6.72**	**-25.17**	**17**

Sources: Individual ULBs in the Various UAs and Authors' Computations.

The story is less rosy as far as a proxy for safety, spending on street lights, is concerned. Observe from Table 2.9 that on average, both central cities and other ULBs of the UAs which we have studied, exhibit expenditure deficits, considered against the norm. The expenditure deficits of the central cities on this service are less than that of the other ULBs, something to be expected, given our preceding discussion. Among the central cities, only the central city in Hyderabad (the Municipal Corporation of Hyderabad) has an expenditure surplus as far as spending on street lighting is concerned, with the other ULBs exhibiting an average of Rs.38 per capita as expenditure deficit on the service. Indeed the non-central city set of ULBs with the worst expenditure deficits on street lights are those in the Kolkata UA, where we also find substantial variation in the spending on street lights.

Expenditure Gaps on All Relevant Services

In this section, we present and summarize expenditure gaps for all relevant services studied here – namely water supply and sewerage, solid waste and sanitation, municipal roads and street lights, to get the big picture as far as spending on all services is concerned. Table 2.10 summarizes these expenditure gaps across central cities and non-central ULBs in the UAs of our study. While in general the smaller ULBs are the ones that are fiscally more stressed (with Hyderabad UA being a good illustrative example of this phenomenon), the behavior of expenditure gaps with respect to all services tracks that of the solid waste and sanitation most closely.

Table 2.10: Expenditure Gaps for All Relevant Services, All UAs, (in Rs.Per Capita Terms, 1999-00 Prices)

Urban Agglomeration	Central City [Average (maximum, minimum)]	Non Central City ULBs [Average (maximum, minimum)]	Number of Observations for Non Central City ULBs
Pune Urban Agglomeration	-49.65 (49.20, -152.50)	-74.20 (199.02, -296.51)	16
Delhi Urban Agglomeration	-224.15 (201.24, -388.29)	NA	NA
Kolkata Urban Agglomeration	NA	83.90 (615.07, 0)	198
Hyderabad Urban Agglomeration	-304.85(-222.22, -539.10)	-297.96 (102.87, -473.47)	31
Chennai Urban Agglomeration	-295.82 (-59.08, -394.02)	-151.97 (301.67, -321.92)	39
Average, all	**-218.62**	**-110.06**	**71**
Average, Delhi, Hyderabad & Chennai	**-274.94**	**-224.97**	**35**
Average, Pune & Kolkata	**-49.65**	**4.85**	**107**

Sources: Individual ULBs in the Various UAs and Authors' Computations.

When all services are taken into account, the expenditure deficits faced by central cities are more severe than that faced by the other ULBs, contrary to popular expectation. Indeed in the Kolkata UA, the non-central city ULBs incur an expenditure surplus on the relevant services considered here, when considered against the norms. This is plausible because these smaller ULBs in the Kolkata UA receive non-plan grants from the state government that presumably enables them to meet these expenditures. While central cities also receive grants to facilitate their provision of essential services, their needs and recommended standards are higher, resulting in expenditure deficits. Indeed the formation of greater metropolitan-wide regional authorities such

as the GHMC (Greater Hyderabad Municipal Corporation) should enable pooling of resources and the provision of services in a better manner. Of course, in such an instance, the service area becomes certainly larger, but cutting down on redundant employee costs through promotion of public-private partnerships, the existence and utilization of scale economies in the provision of services, and better monitoring of service outcomes should promote both efficient as well as delivery of services according to available norms.

Given that water supply and sewerage are not the responsibility of the cities everywhere, we examined expenditure gaps on relevant services by excluding water supply. This is because when water supply is excluded, the remaining services—solid waste and sanitation, municipal roads and street lighting, are always the expenditure responsibility of the municipal entity. Hence this approach allows us to examine expenditure gaps according to cities' expenditure responsibility.

Table 2.11 summarizes expenditure gaps in the various UAs of the study, by excluding water supply and sewerage, since these are both offered by metro water boards in the case of a few cities (Delhi, Hyderabad and Chennai).

Table 2.11: Expenditure Gaps for All Relevant Services, Excluding Water Supply and Sewerage, All UAs, (in Rs.Per Capita Terms, 1999-00 Prices)

Urban Agglomeration	Central City [Average (maximum, minimum)]	Non Central City ULBs [Average (maximum, minimum)]	Number of Observations for Non Central City ULBs
Pune Urban Agglomeration	-185.90 (-173.55, -196.55)	142.74 (469.08, -104.17)	16
Delhi Urban Agglomeration	-119.94 (-87.88, -143.3)	NA	NA
Kolkata Urban Agglomeration	NA	-609.04 (-246.32, -1062.95)	132
Hyderabad Urban Agglomeration	-123.85 (-115.42, -129.37)	-206.91 (-58.79, -269.60)	22
Chennai Urban Agglomeration	-260.12 (-248.09, -267.28)	-213.11 (528.58, -1616.29)	14
Average, all	**-172.45**	**-221.58**	**46**
Average, Delhi, Hyderabad & Chennai	**-167.97**	**-210.01**	**18**
Average, Pune & Kolkata	**NA**	**-233.15**	**74**

Sources: Individual ULBs in the Various UAs and Authors' Computations.

When water supply and sewerage are excluded, the real expenditure gaps for all cities show that indeed it is the smaller ULBs that are hard pressed overall to spend on basic services. This is because while on average, the expenditure gap for central cities in the UAs of our study is Rs.172 per capita, the smaller ULBs face a gap of nearly Rs.222 per capita with respect to

spending on solid waste, sanitation, municipal roads and street lighting. This phenomenon is also valid in the case of cities where non-municipal entities such as the metropolitan water boards provide water supply and sewerage. Note that when water supply and sewerage are included (as in Table 2.10), the central cities face more severe expenditure deficits, more so when the water boards offer the service. In fact when central cities offer the service (as in Pune and Kolkata, Table 2.10) there is a small expenditure surplus in the case of the smaller ULBs, and a substantially reduced deficit in the case of the central cities.

Summary and Concluding Remarks

Summarizing, overall, we find smaller ULBs, when compared with their central city counterparts, are relatively more stressed to spend on essential services, controlling for expenditure responsibility, in all UAs. The phenomenon of low spending by the metropolitan water boards on water supply and sewerage is not new, and is consistent with past studies. This does imply that they are possibly more efficient, or low spenders. More research needs to be done on how spending by the metropolitan water boards, or more generally, non municipal entities cater to household preferences.

The next two chapters respectively focus on comparing the revenue bases, revenue capacities and will assess fiscal health on a comparative basis across the five UAs of our study.

CHAPTER 3 : ANALYSIS OF REVENUE

This chapter summarises the main findings on revenues for the five UAs considered for our study, viz. Kolkata, Delhi, Pune Hyderabad and Chennai. In the reports for individual cities, the respective sections on revenues deal with detailed analyses at the ULB level. The main objective of this chapter would be to bring together the main findings on revenues from each urban agglomeration, synthesise them and attempt a comparative analysis at the UA level.

Taking into consideration the differences in size, population, economic and social bases of the UAs, for comparative assessments the per capita measures for different components of revenues are used. The relative importance of each of the components in total revenues, across UAs, is also evaluated by comparing their proportions in total revenues. The time period for the data available on municipal revenues consisting of all the ULBs of the five UAs in our sample is 1999-00 to 2005-06. But, given the fact that the time period for which data on revenues of the ULBs are available is not the same for all UAs, we would base our comparative assessments on some summary averages on the basis of two most recent years (2003-04 and 2004-05) for which data for most of the ULBs of the UAs are available. All the financial variables are expressed in constant 99-00 prices.

The chapter is divided into two sections. The first section deals with the comparisons of different components of per capita revenues across UAs, followed by a time series analysis of these per capita measures of each UA. The second section deals with the comparisons based on proportions of different components in total revenues across UAs, followed by a time series analysis of these proportions of each UA. The chapter ends with some concluding remarks.

Per Capita Revenues: Summary Findings

Figure 3.1 below gives the summary averages for the years 03-04 and 04-05 of the different components of revenues in per capita terms for the five UAs chosen for the study. Based on these values we have ranked the UAs taking each component. Table 3.1 gives the details of these ranks component wise. Keeping in mind the possibility of abolition of octroi in near future, the ranks are derived taking two scenarios for the revenues, including and excluding octroi, for Pune. The ranks in brackets give the ranks considering the 'without octroi' scenario for Pune.

It is clear that, even if octroi is abolished, Pune, among the UAs, is comparatively the most favorably placed in terms of finances. Both in terms of higher generation of own revenues and lesser reliance on transfers, Pune outperforms the other UAs. It is only the property tax

collection aspect which needs to be given more attention. Higher property tax collections can be achieved by increasing the collection efficiency[5] and greater utilization of the property tax base.

Figure 3.1 Summary: Per Capita Revenues in Five UAs of India (Rs, 99-00)
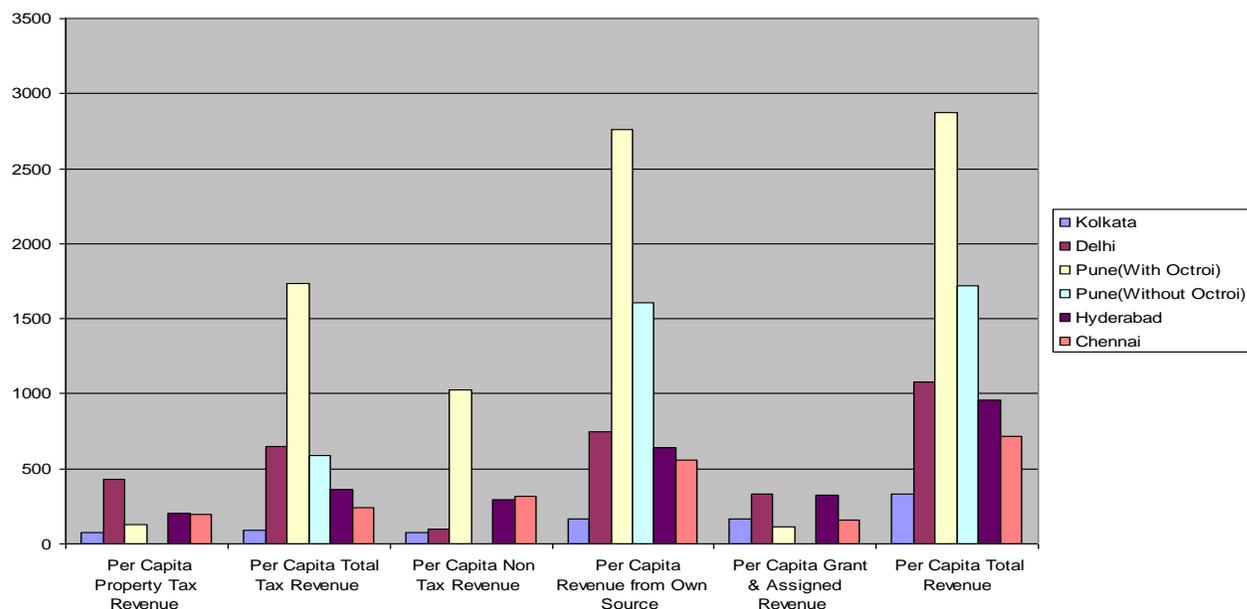
Table 3.1 Summary: Ranks of Five UAs in India in terms of Revenue Collection[6]

UA	Per Capita Property Tax Revenue	Per Capita Total Tax Revenue	Per Capita Non Tax Revenue	Per Capita Revenue from Own Source	Per Capita Grant & Assigned Revenue	Per Capita Total Revenue
Kolkata	5	(5) 5	5	(5) 5	3	(5) 5
Delhi	1	(1) 2	4	(2) 2	1	(2) 2
Pune(With Octroi)	4	1	1	1	5	1
Pune (Without Octroi)	(4)	(2)	(1)	(1)	(5)	(1)
Hyderabad	2	(3) 3	3	(3) 3	2	(3) 3
Chennai	3	(4) 4	2	(4) 4	4	(4) 4

Source Authors' Computations

After Pune stands Delhi, which records the highest per capita transfers, apart from higher own revenues than UAs other than Pune. In terms of per capita property taxes, it outperforms the

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[5] Collection efficiency figures and property tax rates for the UAs are given in Table A1 in the Appendix Tables A1.1-A1.4 give the ULB wise details on average collection efficiency for the years 2003-04 and 2004-05 available for four UAs to give an idea of the variation in these figures across ULBs in the same UA..

[6] Ranks within brackets in Tables 3.1 and 3.2 refer to those by considering the 'without octroi' scenario in Pune.

other UAs. This can be attributable to the scientific valuation method followed for property tax assessments in the UA for which despite low collection efficiency in property taxes, the property tax collection is the highest among the UAs. Also, the higher levels of income generated in the UA can cause greater concentration of high value properties in the UA. But given the intensity of economic activities pursued in the UA, the UA is yet to tap the non tax revenue potential to the optimal degree as the per capita non tax revenues are lower than most of the UAs. However if we bring in the effect of population the lower per capita non tax revenues can be justified on the ground that for Delhi, the population of central city (MCD) is 1.5 crores on an average for 04-05 whereas those for Pune (PMC) is around 30 lakhs, for Hyderabad (MCH) is around 38.5 lakhs, for Chennai (COC) and Kolkata (KMC) is around 46 lakhs[7]. In fact if we bring in the population side of the story in relative terms with respect to per capita averages Delhi outperforms Pune.

The order of finances is the worst in Kolkata by all components of the per capita revenues. The arbitrary valuation technique, which does not have an objective basis, followed in property tax assessments are responsible for low property tax collections. The low per capita non tax revenues are indicative of the displacement of economic activities away from the UA. The situations in Kolkata can be explained mainly by lack of proper policy orientation which has caused a lower vibrancy of the economy of the city which in turn results in abysmally low revenue generation in the UA.

A close look (Figure 3.2-3.7) at the behavior of different components of per capita revenues over time (99-00 to 05-06) reveals that at the UA level, most of the components record mixed trends over time. However, we find an overall increasing trend in per capita property taxes for Kolkata, Pune and Hyderabad and an overall decreasing trend for Chennai and Delhi. The per capita total taxes show an overall increasing trend for Pune[8], Kolkata and Hyderabad and an overall stable pattern for Delhi and Chennai. Per capita non tax revenues record an increasing trend in Kolkata and Chennai, while other UAs recording fluctuations with a falling trend in recent years for Delhi and Hyderabad. Per capita own revenues have risen in Kolkata and Hyderabad, are almost stable for Delhi and Chennai and shows fluctuations for Pune. Per capita transfers have been increasing in Kolkata and Delhi, falling in Hyderabad and fluctuating in Pune. An increasing trend in per capita total revenues is recorded for Delhi and Hyderabad; Kolkata and Chennai showing almost stable values across years with Pune showing slightly increasing trends in the most recent years after fluctuations. Figures 3.2 -3.7 give the details of the behavior of different components of per capita revenues with time for the UAs.

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[7]Arranged in descending order of population of 'a representative ULB' for a UA, the UAs are Delhi, Pune, Chennai, Hyderabad, Kolkata. See Table 1.1, Chapter 1.
[8] Without octroi scenario for Pune shows a mixed trend starting with increasing over time from 99-00 to 03-04 and then falling.

Figure 3.2 Per Capita Property Tax in Five UAs of India Over Time (Rs, 99-00)
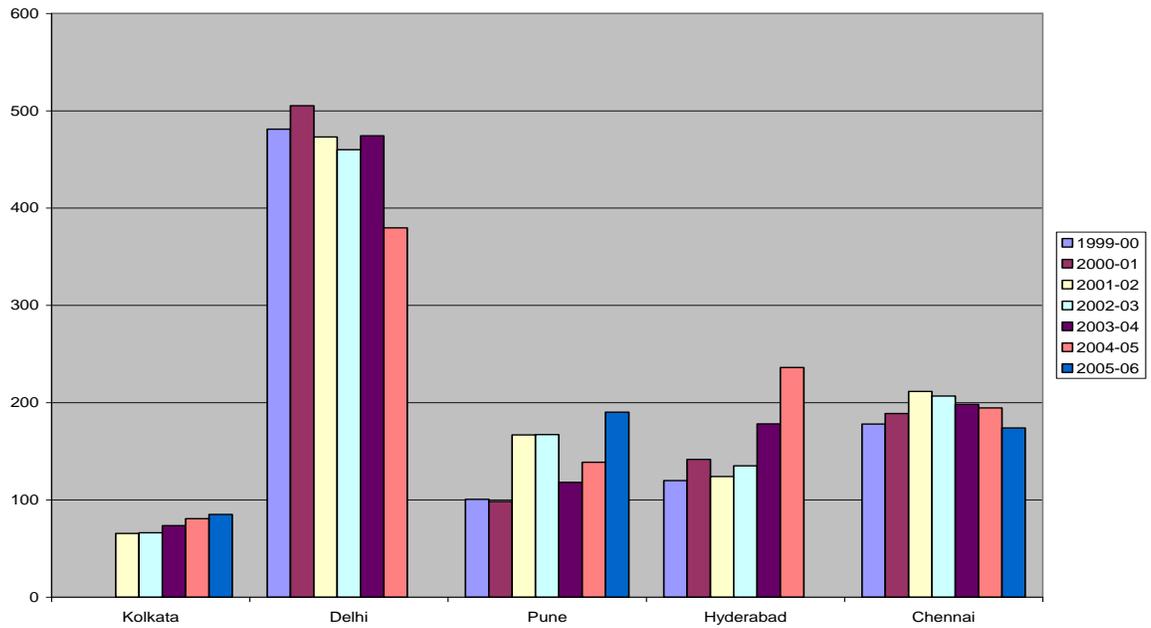
Figure 3.3 Per Capita Total Tax Revenue in Five UAs of India Over Time (Rs, 99-00)
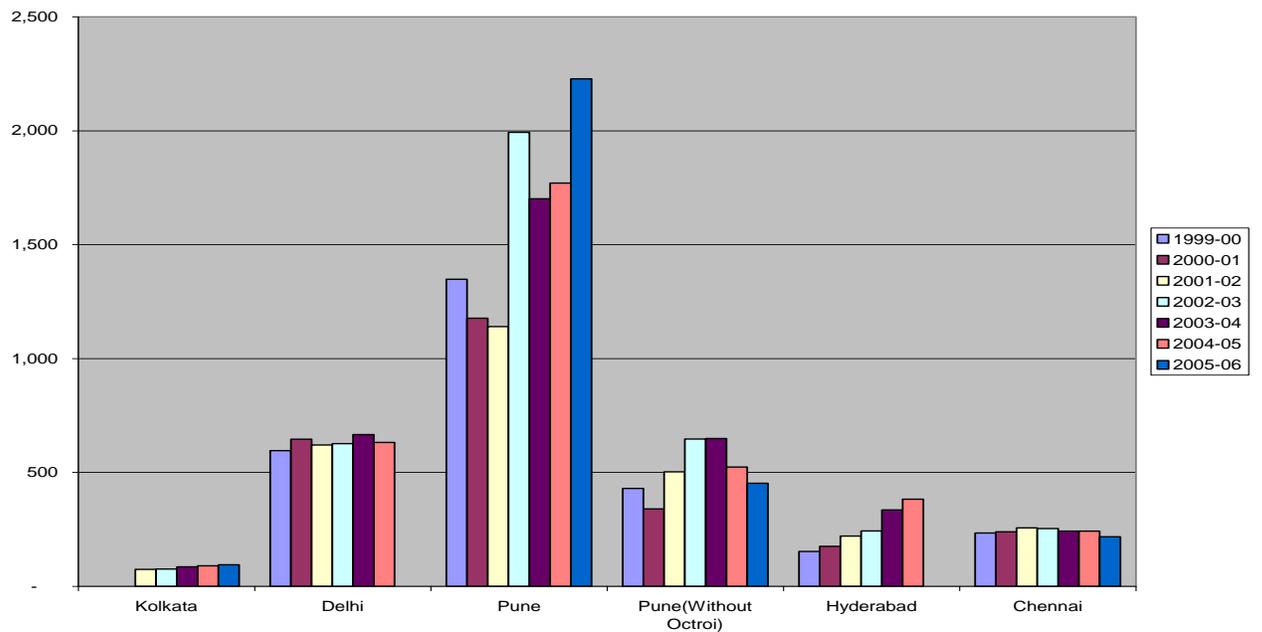
Figure 3.4 Per Capita Non Tax Revenues in Five UAs of India Over Time (Rs, 99-00)
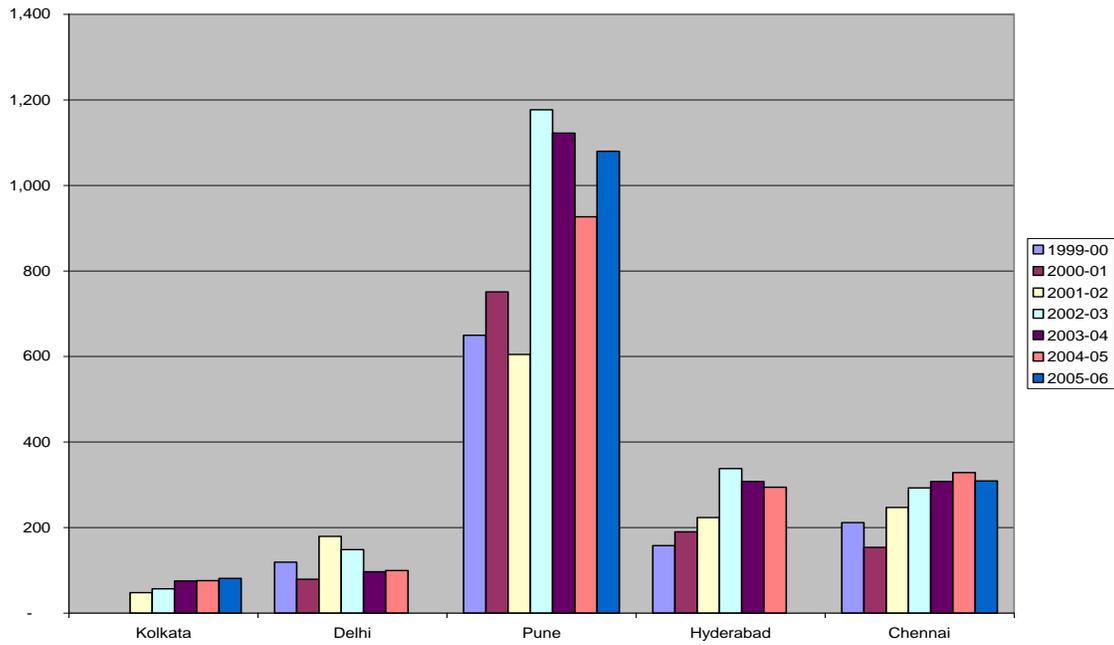
Figure 3.5 Per Capita Own Revenues in Five UAs of India Over Time (Rs, 99-00)
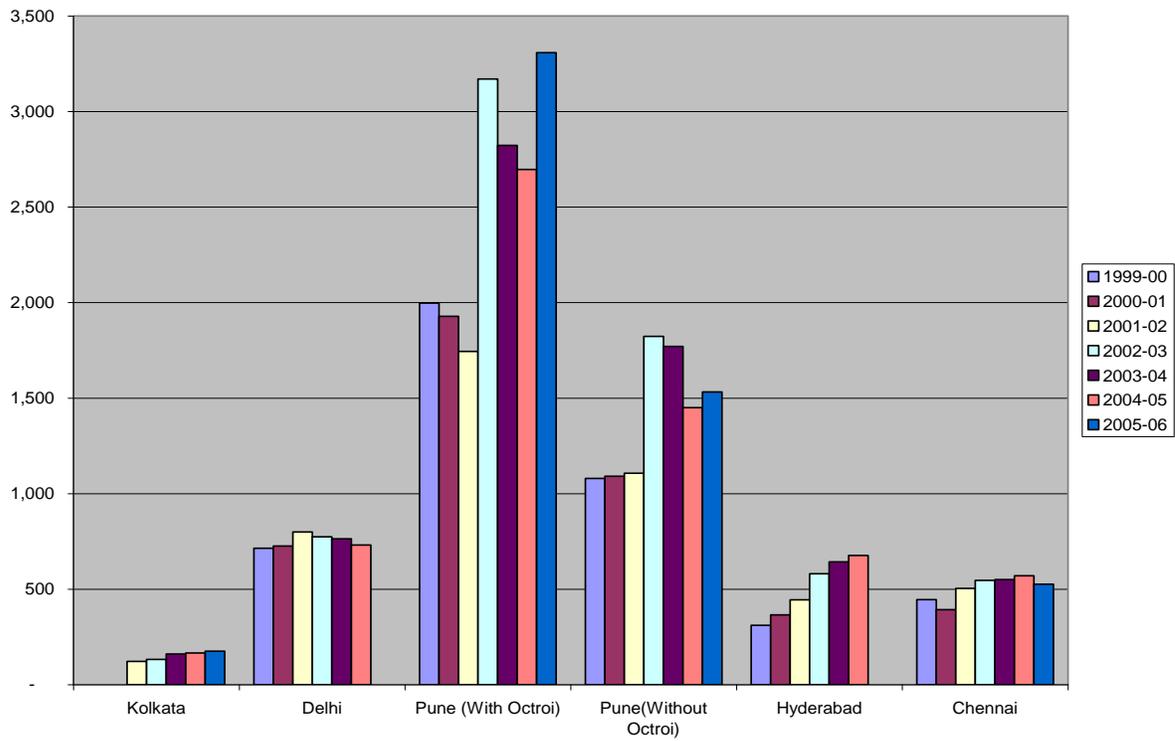
Figure 3.6 Per Capita Transfers in Five UAs of India Over Time (Rs, 99-00)
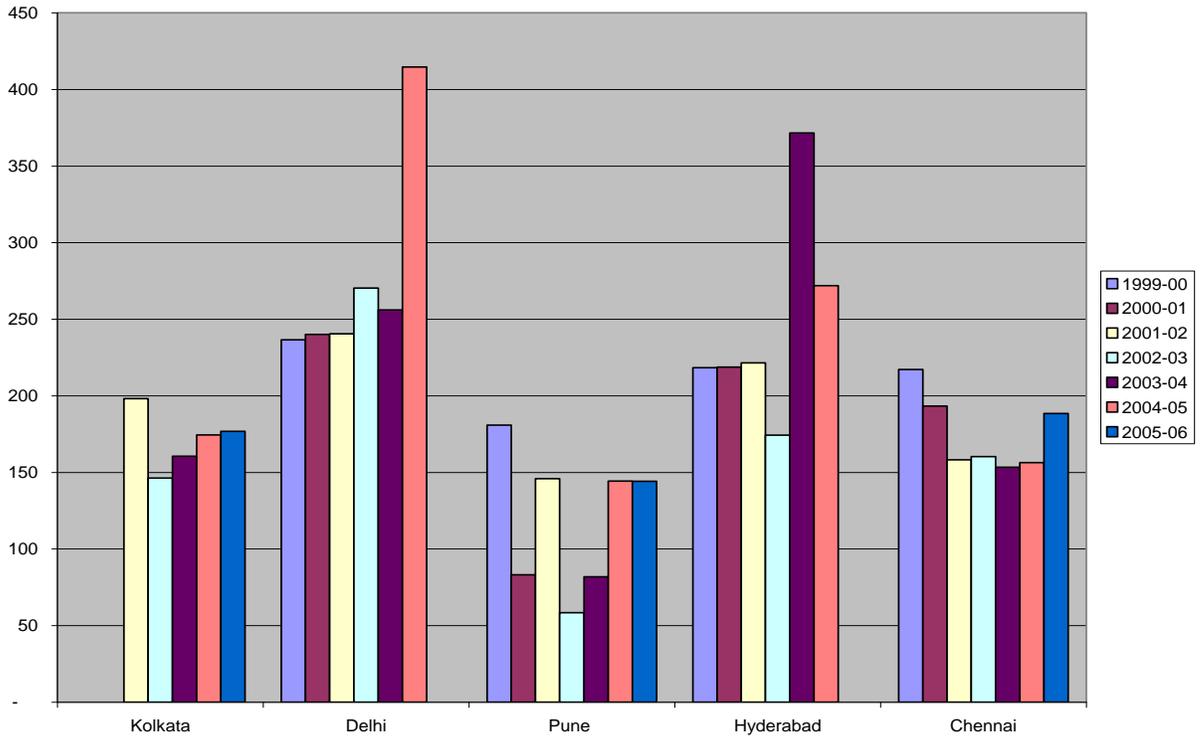
Figure 3.7 Per Capita Total Revenue in Five UAs in India Over Time (Rs, 99-00)
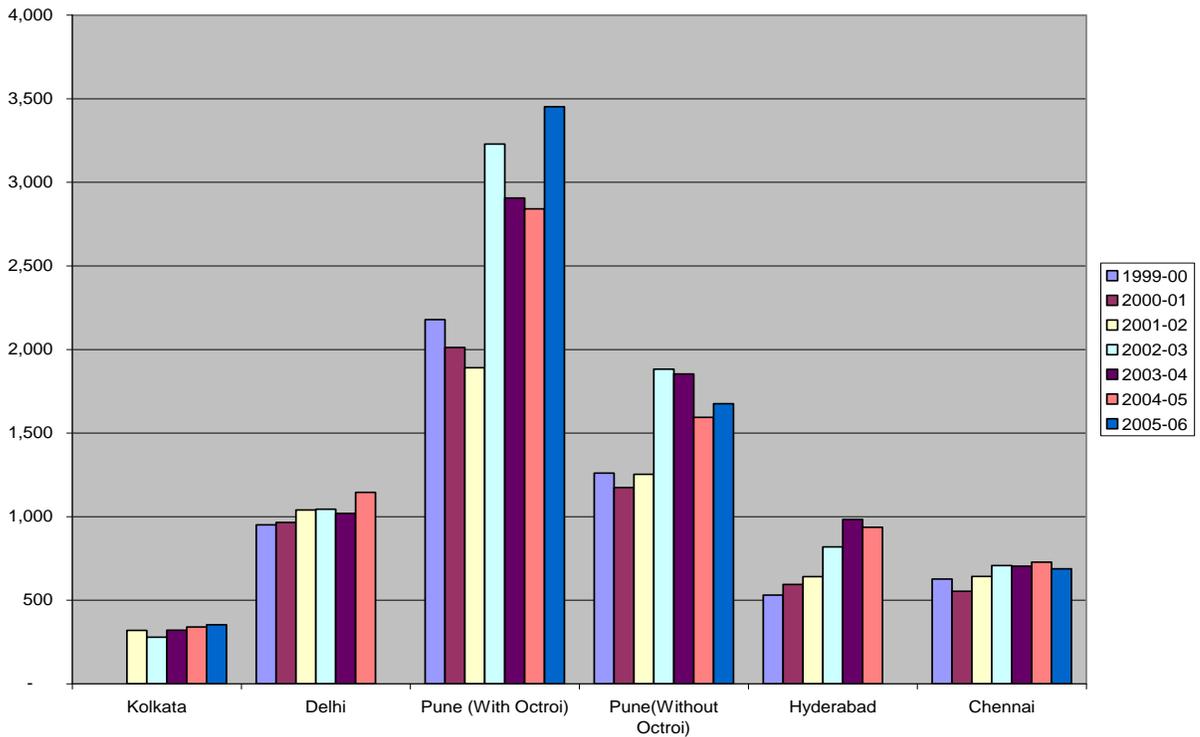
Composition of Revenues: Summary Findings

This section gives an overview of the composition of own revenues and total revenues for the UAs. Figure 3.8 gives the details of the composition of own revenues and total revenues of the five UAs considered for the study. The averages of the respective proportions for the most recent years, 2003-04 and 2004-05 are used to summarise the findings. Table 3.2 records the ranks of the UAs in terms of these proportions.

Figure 3.8 Summary: Composition of Revenues in Five UAs of India
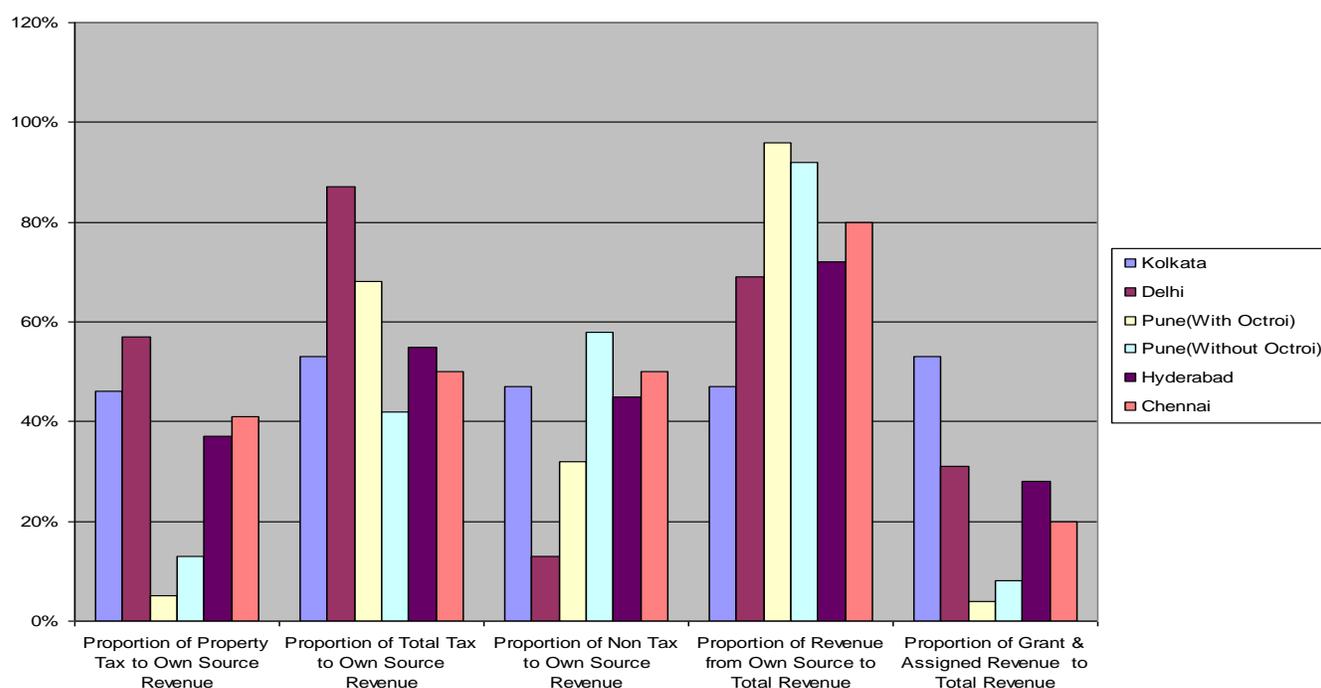
Table 3.2 Summary: Ranks of Five UAs in India in Terms of Composition of Revenues

UA	Proportion of Property Tax to Own Source Revenue		Proportion of Total Tax to Own Source Revenue		Proportion of Non Tax to Own Source Revenue		Proportion of Revenue from Own Source to Total Revenue		Proportion of Grant & Assigned Revenue to Total Revenue	
Kolkata	(2)	2	(3)	4	(3)	2	(5)	5	(1)	1
Delhi	(1)	1	(1)	1	(5)	5	(4)	4	(2)	2
Pune(With Octroi)		5		2		4		1		5
Pune(Without Octroi)	(5)		(5)		(1)		(1)		(5)	
Hyderabad	(4)	4	(2)	3	(4)	3	(3)	3	(3)	3
Chennai	(3)	3	(4)	5	(2)	1	(2)	2	(4)	4

Source Authors' Computations

It is interesting to note that Pune records the highest share of own revenues in total revenues, even without octroi and thus the lowest share of transfers. However, the proportion of property tax in own revenue is the lowest in Pune. The share of total tax revenue excluding octroi is thus the lowest. However, including octroi the UA ranks second after Delhi in terms of the share of tax revenue in total revenue. Delhi records the highest share of property tax and total tax revenues in own revenues and stands next to Pune in terms of share of own revenues in total revenues. Delhi's share of non tax revenues to total revenues is however the lowest. Kolkata records the lowest share of own revenues in total revenues and the highest share of transfers in total revenues.

Figures 3.9-3.13 give the details of the behavior of the shares of different components of revenues over time. We find that for Kolkata the share of property tax and total tax in own revenues have declined over time whereas that of the non tax revenues has increased; while the share of own revenues in total revenues have not changed much over the study period, share of transfers has declined. For Delhi we find a decline in both property tax and non tax shares in own revenues while the share of total tax remains stable; a decline in own revenues share in total revenue and a rise in the share of transfers in own revenues. Pune shows a stable share of own revenues with a decline in the share of transfers in total revenues whereas Hyderabad records a

Figure 3.9 Proportions of Property Tax Revenue to Own Revenue Over Time
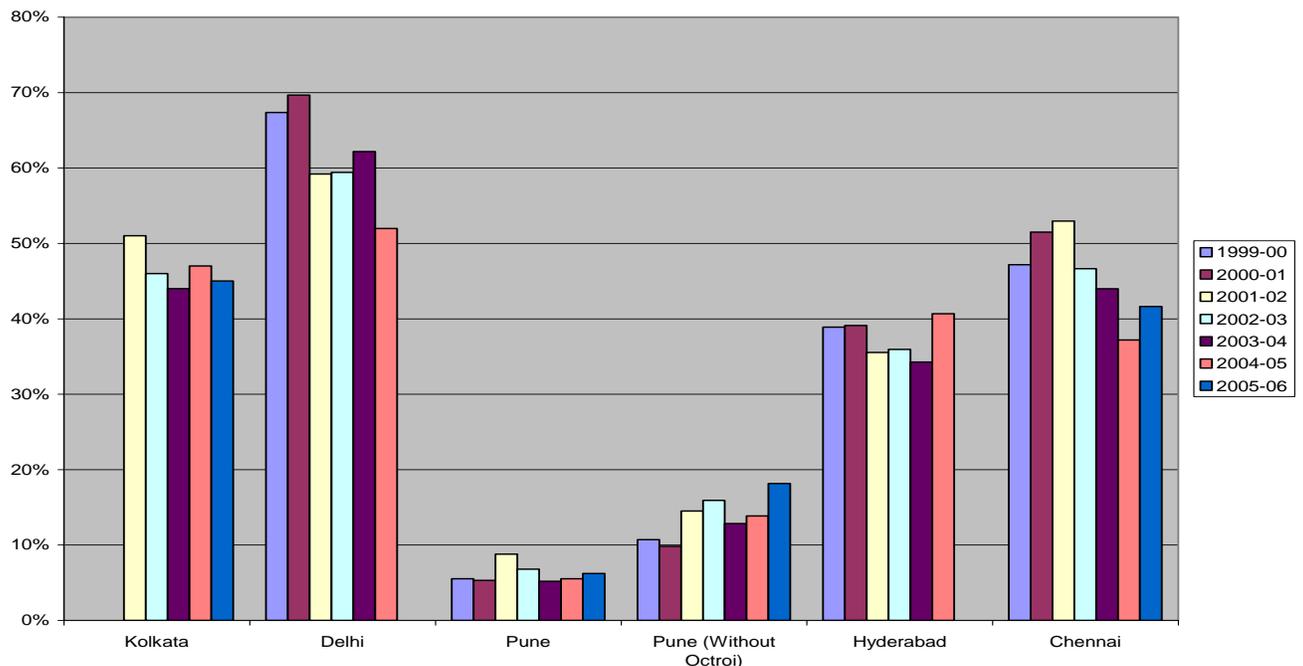
Figure 3.10 Proportions of Total Tax to Own Revenue Over Time
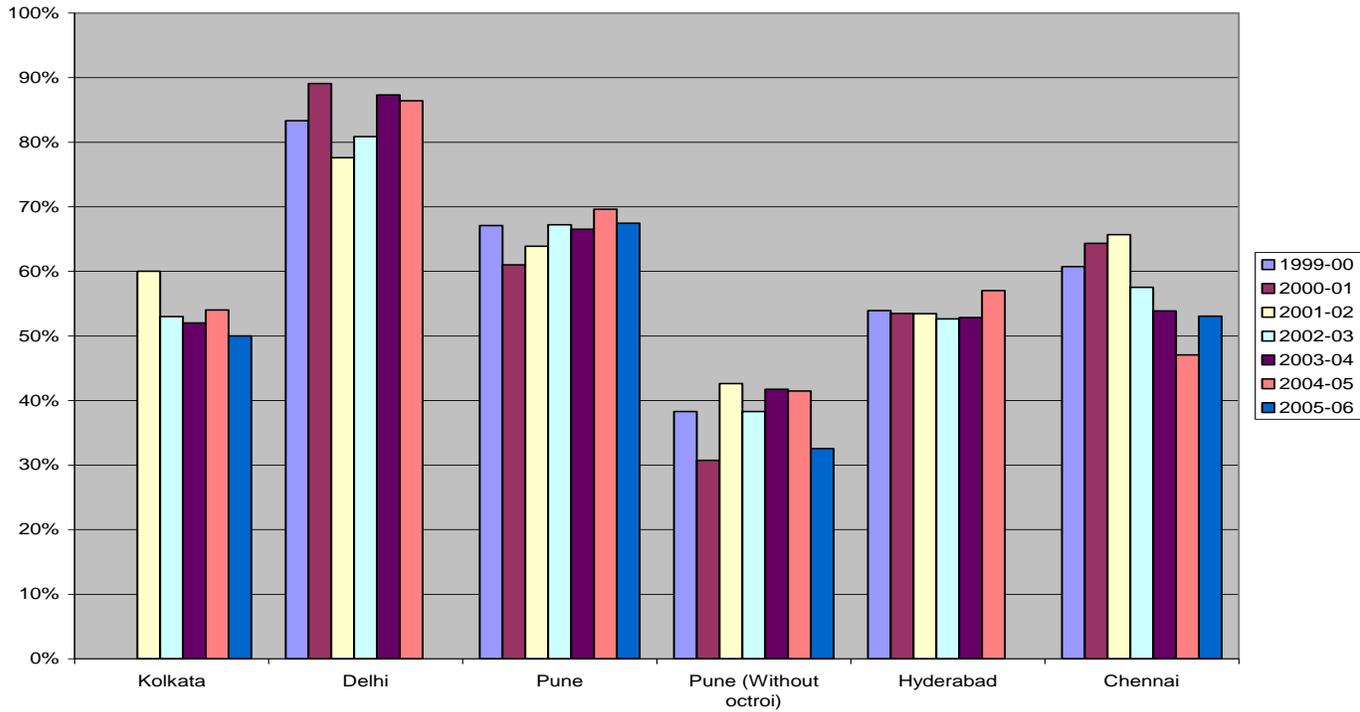
Figure 3.11 Proportions of Non Tax Revenue to Own Revenue Over Time
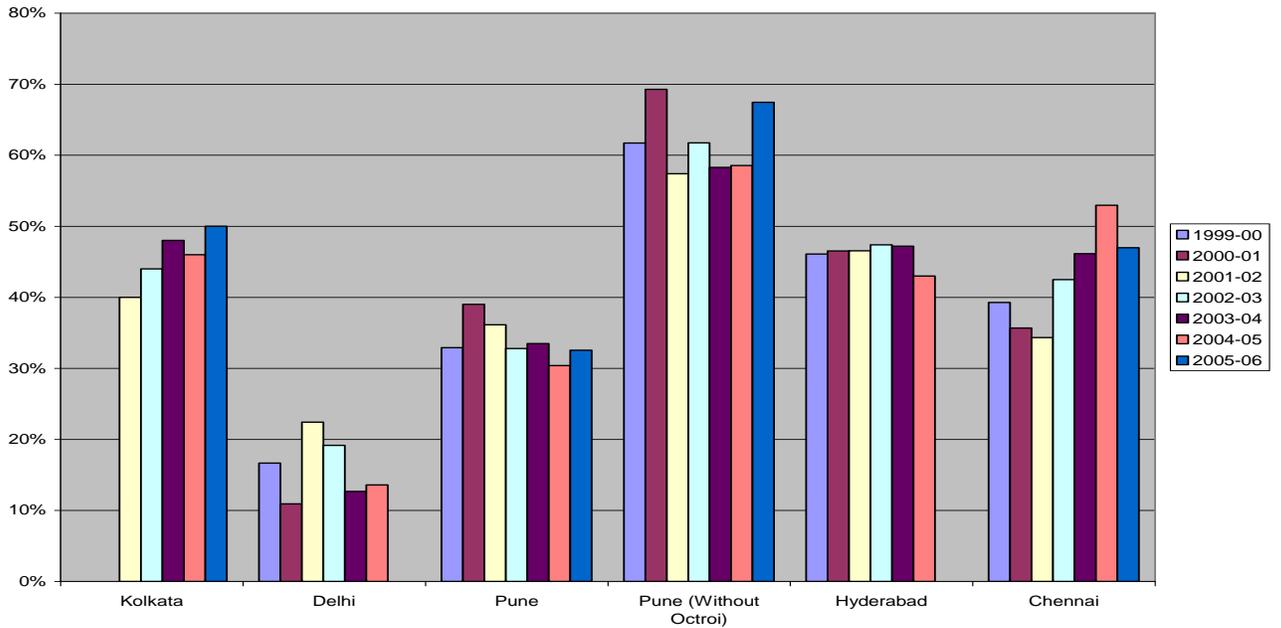
Figure 3.12 Proportions of Own Revenue to Total Revenue
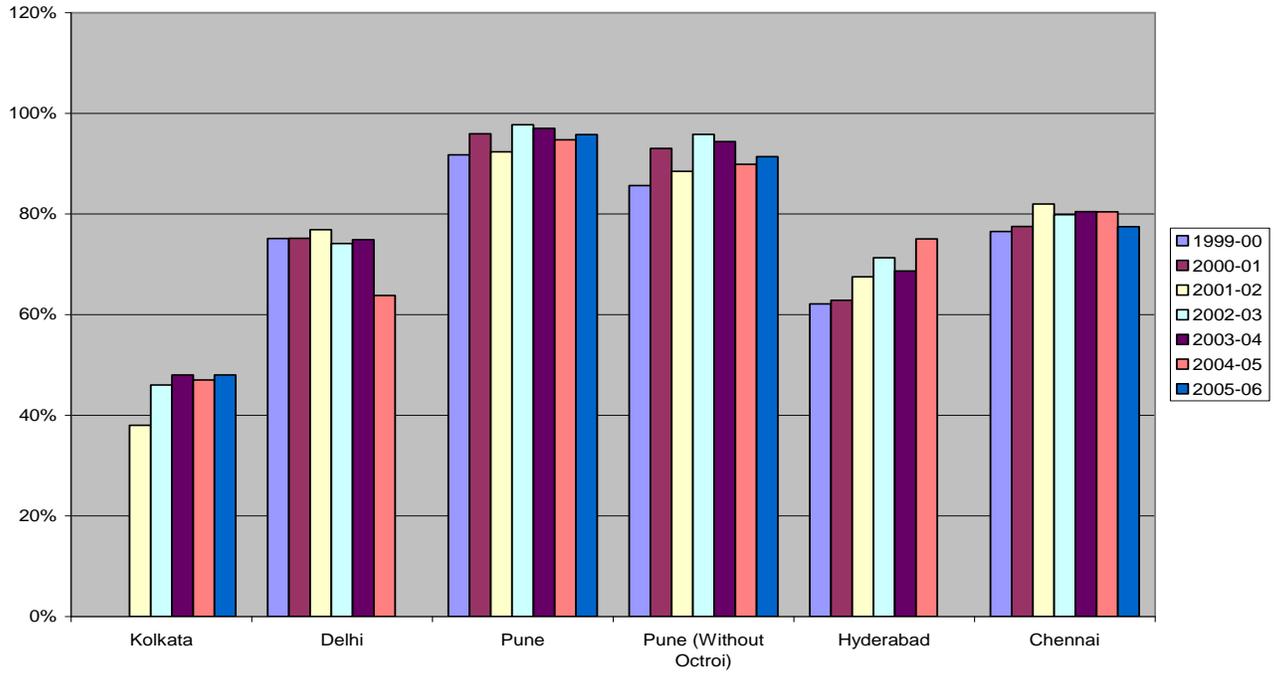
Figure 3.13 Proportions of Transfers to Total Revenue Over Time
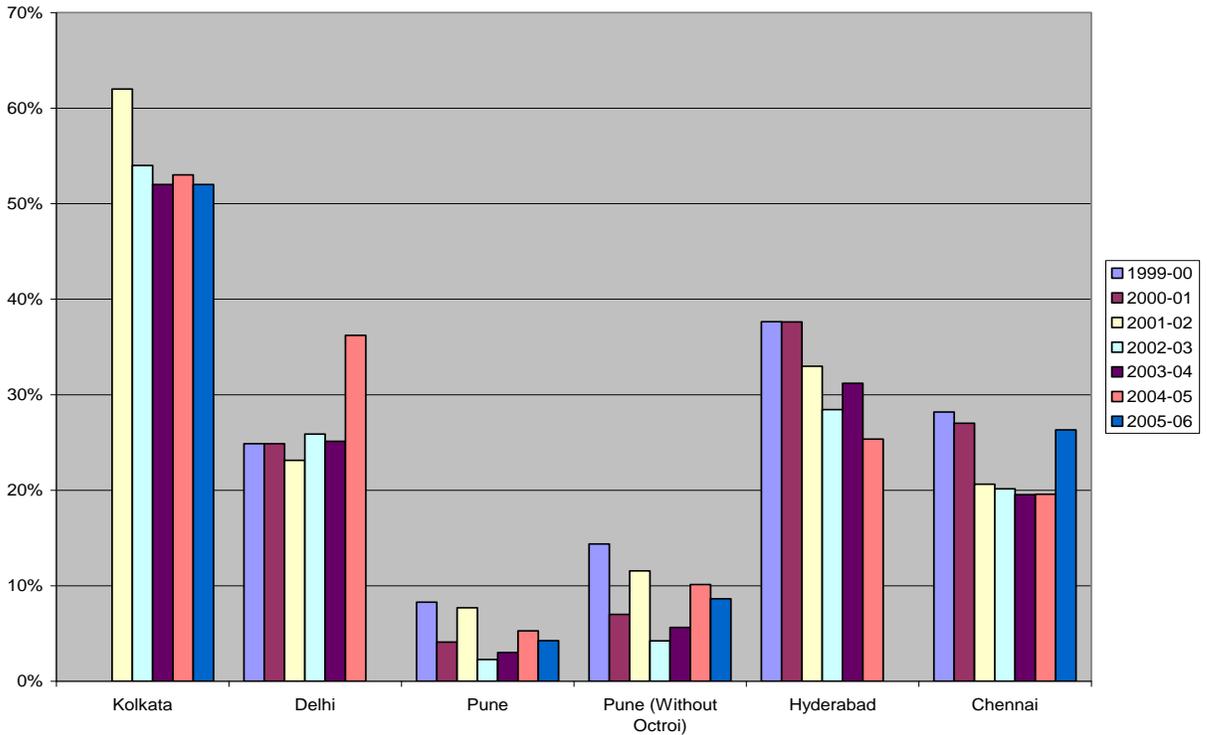
rise in the share of own revenues and a decline in the share of transfers in total revenues. For Chennai we find a decline in the share of property tax in own revenues, a stable share of own revenues in total revenues and a drastic rise in the share of transfers in total revenues in the most recent year following a decline in the previous years.

Conclusions

To sum up we can say that the analysis of revenues in the five UAs considered for the study makes it very clear that apart from local policy initiatives, the difference in the socio-demographic, political and economic factors among the cities in many ways can cause differences in the levels of revenues generated. While grants are determined by political economy factors, tax and non tax components are mainly governed by the vibrancy of economic and commercial activities in the city, the administrative efficiency of the local government and the local policy directives. Also, we can bring in the demand side and explain the variations in total revenues by variations in the levels of awareness of the residents of the city, who in the process of demanding higher levels of quality services can enable the local government to generate higher revenues.

We find that among the UAs chosen for the study, in terms of revenue generation, Pune is the most efficient. But overdependence on octroi as a huge source of revenues has caused a neglect in tapping the property tax potential of the city. For Delhi, it is the non tax revenue potential which needs to be more efficiently utilized. Property tax collection efficiency also is low, which means there are possibilities of more property tax collections in the city than generated at present. The recent trend of falling share of property taxes is somewhat disturbing. Chennai and Hyderabad show a moderate performance in terms of revenues, after Pune and Delhi. Kolkata has serious problems reflected in very low values of the revenue components, all of which are much below the respective levels of the other cities.

For all the cities the most important step would be to come up with property tax reforms because property taxes form the backbone of municipal revenues. Periodic revision of rates and proper valuation techniques can boost up the revenues. Periodic revisions in other tax rates and the user charges and fees in the non tax component are also required with massive in migration in all the fast developing UAs. The low collection efficiencies in property tax collections in all the UAs excepting Hyderabad indicate to the poor administrative performance of the local governments. Improving the administrative efficiency at the local government level is necessary to facilitate the generation of revenues.

Appendix

Table A1 Summary: Property Tax Rates and Collection Efficiency

UA	Property Tax Rate	Collection Efficiency
Kolkata	11-40%	35%
Delhi	Not Applicable	32%
Pune	14-38%	48%
Hyderabad	17-30%	72%
Chennai	13-25%	53%

Source: Authors' Computations

Table A 1.1 Collection Efficiency for Chennai

ULB	Collection Efficiency
COC	84%
Pallawarm	19%
Alandur	90%
Avadi	41%
Ambattur	37%
Tiruvottiyur	46%
Average for Chennai UA	53%

Source: Authors' Computations

Table A 1.2 Collection Efficiency for Hyderabad

ULB	Collection Efficiency
Malkajgiri	95%
Qutbullapur	69%
Rajendra Nagar	51%
Average for Hyderabad UA	72%

Source: Authors' Computations

Table A 1.3 Collection Efficiency for Pune

ULB	Collection Efficiency
PMC	34%
PCMC	34%
DCB	78%
Average for Pune UA	48%

Source: Authors' Computations

Table A 1.4 Collection Efficiency for Kolkata

ULB	Collection Efficiency
Baidyabati	14
Bally	26
Bansberia	14
Baranagar	23
Barasat	22
Barrackpore	81
Baruipur	32
Bhadreswar	76
Bhatpara	16
Bidhan Nagar	79
Budge Budge	23
Champdany	15
Chandannagore Mc	63
DumDum	26
Garulia	5
Gayeshpur	5
Halisahar	31
Hoogly Chinsurah	68
Howrah Municipal Corporation	12
Kalyani	21
Kamarhati	46
Kanchrapara	17
Khardah	45
Konnagar	11
Madhyamgram	55
Maheshtala	20
Naihati	9
New Barrackpore	57
North Barrackpore	57
North DumDum	55
Panihati	14
Pujali	65
Rajarhat Gopalpur	90
Rajpur Sonarpur	55
Rishra	22
Serampore	21
South DumDum	31
Titagarh	21
Uluberia	11
Uttar para Kotrung	28
Average for Kolkata UA	34.55

Source: Authors' Computations

CHAPTER 4 : ASSESSMENT OF FISCAL HEALTH

This chapter brings together the different aspects of fiscal health of the sample of UAs taken up for the present study. The individual report for each UA deals with these aspects for the ULBs in each UA and also the UA as a whole. The objective of this chapter is to give a comparative assessment across the UAs in terms of different indicators related to fiscal health. In the process we would compare the estimates of Gross City Products (GCP) and maximum revenue capacities of the UAs generated by us. We would be interested to compare the extent of flexibility of the UAs in terms of revenue generation that is to say, by how much, both in absolute per capita terms and in relative proportional terms, the UAs can gain in terms of revenues once the revenue potentials are realized. The difference between per capita revenue capacities and per capita actual revenues and the ratio of revenue capacity to actual revenues are used as the indicators for these comparisons.

We would consider three categories of gaps by bringing in two aspects of fiscal health together, the revenues and the expenditures, for a comparative assessment of the five UAs considered for the study. Firstly, the fiscal gaps, which measures the difference between two ideals, the maximum revenue capacity and the expenditure need[9] of the UAs. Second, the revenue-expenditure need gaps which give the differences between actual revenues and expenditure needs. Third, the expenditure gaps[10] which give the differences between the actual expenditures and the expenditure needs.

The chapter is divided into two sections. The first section deals with the comparative analysis in terms of the GCPs and revenue capacities of the UAs. The second section deals with the comparative assessment of the UAs in terms of the three categories of 'gaps' related to the fiscal health of the cities. The conclusions summarise the main findings. All the financial variables are expressed in 99-00 prices. All comparisons are based on the averages of each variable for the most recent years ie 2003-04 and 2004-05[11].

Revenue Capacity: A Comparative Analysis

The revenue capacity gives the maximum revenue potential of a UA. For estimating the revenue capacities of the UAs, we have followed the same methodology for all the UAs which is a variant of the Representative Tax System. In the absence of data on GCPs, we have used the per

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[9] For detailed discussion on service wise expenditure needs see Chapter 2.

[10] For detailed discussion on service wise expenditure gaps see Chapter 2.

[11] For Kolkata the gaps refer to the year 2003-04 as data on expenditures are available only till 03-04.

capita values of the non-agricultural component[12] of the District Domestic Products in which the ULB is located and multiplied it by the population of the ULB. We have derived the urban base for revenue generation for each UA as these GCPs, averaged across ULBs.

For calculations of the revenue capacities, we have referred to the actual revenue to GCP ratio of the UAs. We have used a ratio higher than this, by a margin which is not politically infeasible, to arrive at the 'ideal rate' of revenue generation for the UAs. The ratio considered for Kolkata, Chennai and Hyderabad is 4% and that for Delhi and Pune is 3%. We have applied these ratios to the GCPs to derive the revenue capacity figures.

Figure 4.1 Estimated GCPs of Five UAs in India (Rs. 99-00)

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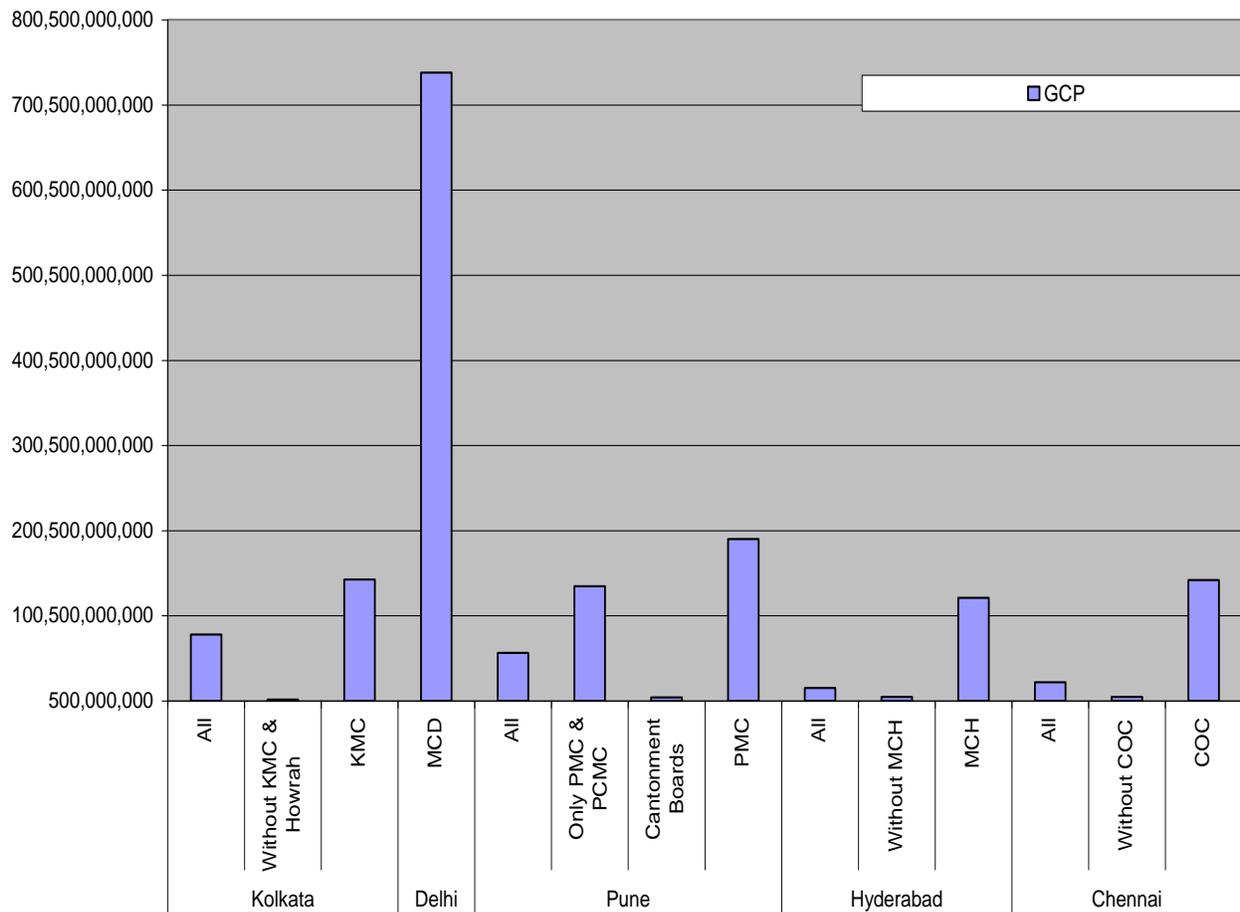
[12] Only for Kolkata, the non-agricultural component of the District Domestic Product (DDP) is not available, so we have used per capita values for the DDPs.

Figure 4.2 Estimated GCPs (Per Capita) of Five UAs in India (Rs. 99-00) [13]

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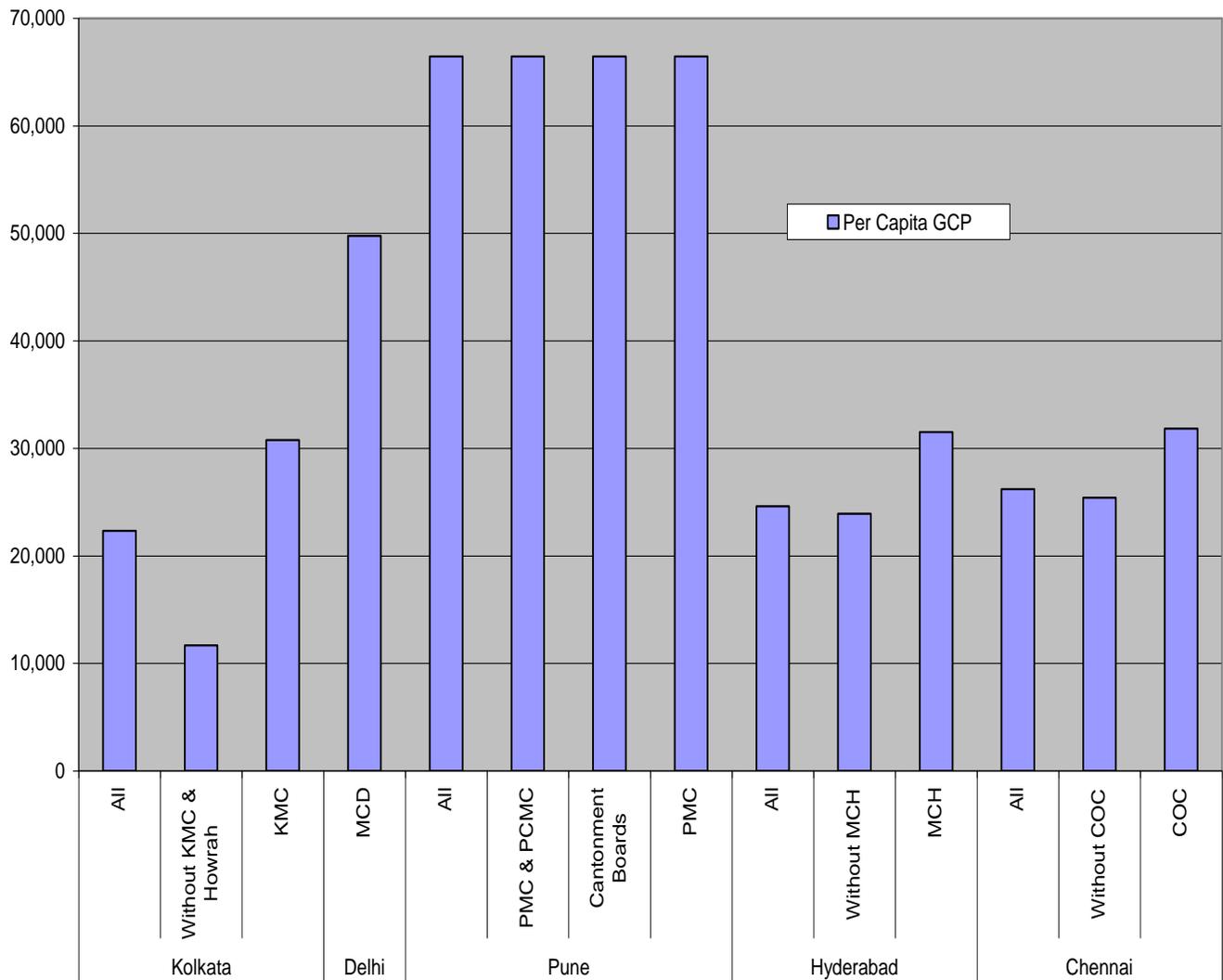
[13] All the ULBs in Pune are situated in the same district (Pune District) in Maharashtra, so the per capita averages for all the categories of ULBs in Pune are the same.

Figure 4.3 Revenue Capacities (Absolute) of UAs in India (Rs, 99-00)
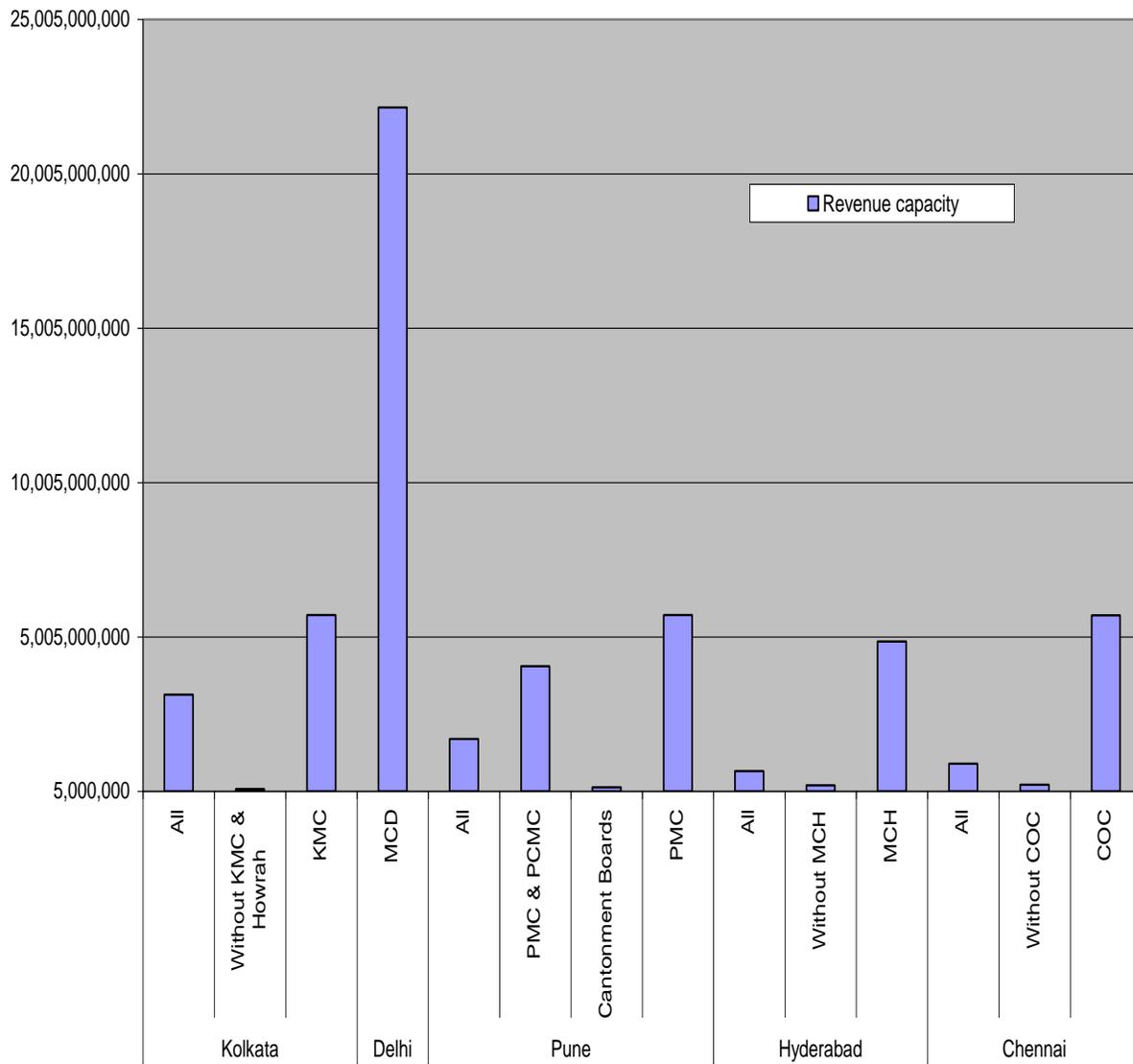
Figure 4.4 Revenue Capacities (Per Capita) of UAs in India (Rs, 99-00)
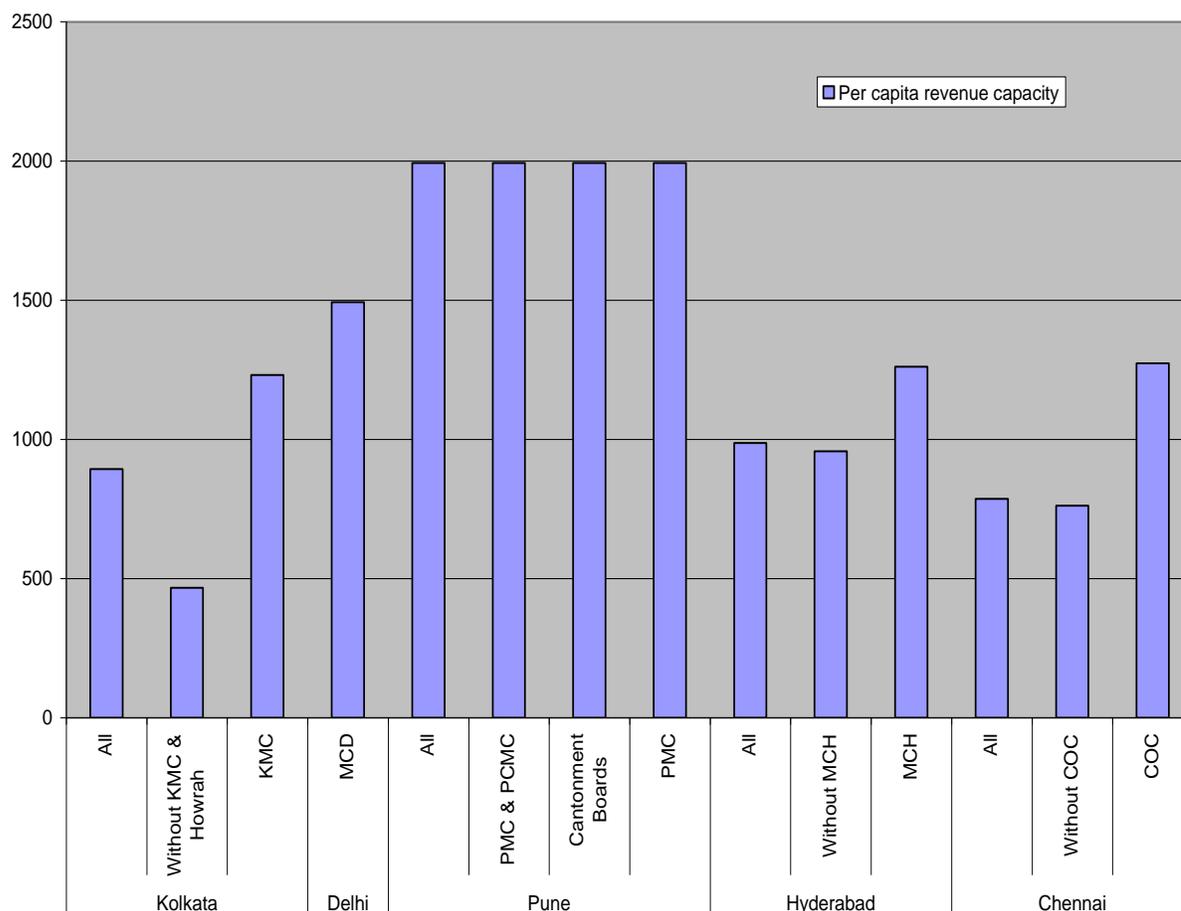
Figures 4.1-4.4 give the details of the GCPs and revenue capacities in absolute and per capita terms for the UAs. The analysis involves three categories, one on the basis of the average for the biggest ULB in the UA, one on the basis of the average for the smaller ULBs and one on the basis of the average for all the ULBs in the UA.

Table A1.1 in the Appendix records the values of GCPs and Revenue Capacities in absolute and per capita terms. On the basis of the above Figures and Table A 1.1 the UAs are ranked in terms of their GCPs and revenue capacities, both in absolute and per capita terms. The ranks for the three categories are summarized in Tables 4.1-4.3.

Table 4.1 gives the ranks of the biggest municipal corporation in each UA. We find that in terms of absolute GCP, MCD in Delhi records the highest while in per capita terms PMC in Pune records the highest. The lowest in terms of absolute GCP is recorded in MCH in Hyderabad

Table 4.1: Ranks of Five UAs in India (Biggest ULB)

UA	Biggest ULB	GCP	Per Capita GCP	Revenue Capacity	Per capita Revenue Capacity
Kolkata	KMC	3	5	2	5
Delhi	MCD	1	2	1	2
Pume	PMC	2	1	3	1
Hyderabad	MCH	5	4	5	4
Chennai	COC	4	3	4	3

Source: Authors' Computations

while that in per capita terms in recorded in Kolkata. The ranks do not change much if we take the revenue capacities. While KMC in Kolkata records the second highest value in terms of absolute revenue capacities, in per capita terms PMC in Pune records the highest value, which records the third highest value in terms of absolute revenues after Delhi and Kolkata.

Table 4.2: Ranks of Five UAs in India (Smaller UlBs)

UA	GCP	Per Capita GCP	Revenue Capacity	Per capita Revenue Capacity
Kolkata	4	4	4	4
Pume	3	1	3	1
Hyderabad	2	3	2	2
Chennai	1	2	1	3

Source: Authors' Computations

Table 4.2 gives the ranks of the smaller ULBs in the UAs. We find that a smaller ULB in Chennai on an average records the highest value for both GCP and revenue capacity in absolute terms whereas in per capita terms a smaller ULB in Pune records the highest. A smaller ULB in Kolkata records the lowest value of GCP and revenue capacity, both in absolute and per capita terms. In terms of per capita GCP, Chennai records the second highest value followed by Hyderabad whereas in terms of revenue capacity Hyderabad records the second highest value followed by Chennai.

Table 4.3 below gives the ranks on the basis of the averages of all the ULBs in a UA. We find that in terms of absolute GCP Kolkata records the highest and Hyderabad records the lowest value whereas in terms of per capita GCP, Pune records the highest and Kolkata the lowest. In terms of absolute revenue capacity, ranks are the same as those in terms of absolute GCPs but in terms of per capita revenue capacity, Pune records the highest value while Chennai records the lowest.

Table 4.3: Ranks of Five UAs in India (All ULBs)

UA	GCP	Per Capita GCP	Revenue Capacity	Per capita Revenue Capacity
Kolkata	1	4	1	3
Pume	2	1	2	1
Hyderabad	4	3	4	2
Chennai	3	2	3	4

Source: Authors' Computations

It is not very difficult to identify the factors determining these ranks. Some general comments would make the analysis more complete. The order of the ranks follows from the methodology of estimation of GCPs and revenue capacities. For GCPs in absolute terms, the population and the magnitude of the non agricultural component of GCPs across UAs are the determining factors. It is the relative strength of each of these components that determine the order of the ranks of the UAs in terms of GCPs. For Kolkata, the GCP estimates are slightly overestimated because the per capita non agricultural component of the DDP is lower than the per capita DDP summing across all the sectors[14]. Also, it is the relative importance of the agricultural and non-agricultural sectors in the Districts' economy which has an influence in our estimates. But given the data constraints, the methodology chosen suits our requirements to a considerable extent.

The ranks of the UAs in terms of the revenue capacities, apart from the factors involved in the estimation of GCP mentioned above, depend on the actual revenue to GCP ratios in the UAs. Other factors remaining the same, the higher these ratios, the higher the revenue capacities. However, the margins by which the actual revenue GCP ratios are increased to generate the revenue capacities depend mainly on the actual revenue to revenue capacity ratios and also on the average per capita revenues. For instance, the margin is almost the same, varying slightly across 1 %, for Pune, Hyderabad, Delhi and Chennai for Kolkata we have used a margin of 2% because of lower average per capita revenues generated by the UA.

Indicators of Fiscal Health: A Comparative Analysis

This section brings together different aspects of fiscal health of the UAs and attempts a comparative analysis. We would base our analysis on five indicators. First, we would compare the difference between revenue capacity and actual revenue both in per capita terms and as a ratio of the revenue capacity to actual revenue. This gives an indication to how flexible the economy of

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[14] In our sample of UAs, the share of agriculture in the DDP for the most recent years 2003-04 and 04-05 in the districts are: Delhi : Delhi District- around 1% for both the years , Pune: Pune district-12% and 11%; Hyderabad: Hyderabad district- 0% for both the years, Rangareddy district - 5% and 4%, Chennai: Chennai district-1%, Kancheepuram district- 5% and 4%, Thiruvallur district-around 5% for both the years.

the UA is in terms of revenue generation. Then we would bring in the expenditure need component and analyse three sets of gaps: fiscal gap, the gap between actual revenues and expenditure need and the gap between actual expenditure and expenditure need (expenditure gap). All the gaps are expressed in per capita terms in 99-00 prices. Figure 4.5 summarises the findings on these gaps for the five UAs in our study. Table A 1.2 in the Appendix tabulates the values of these indicators.

Figure 4.5 Some Indicators of Fiscal Health (Per Capita) for five UAs in India (Rs, 99-00)
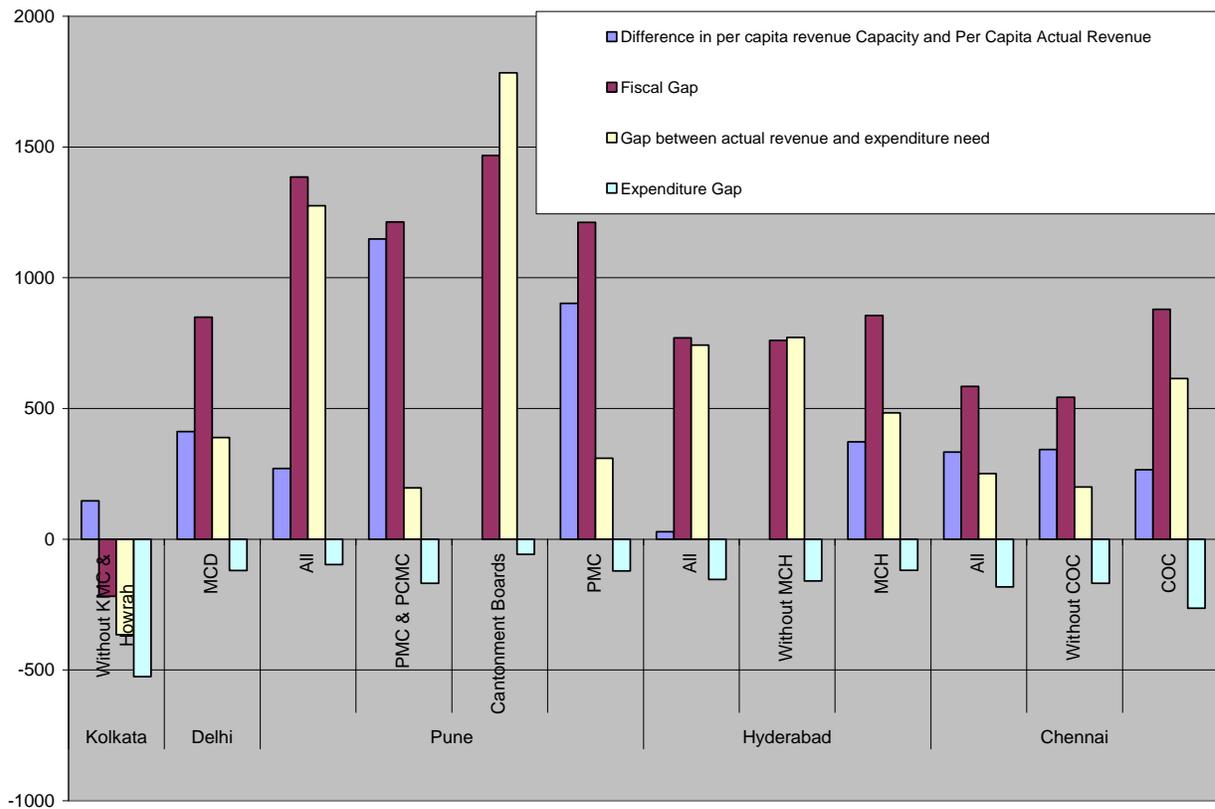
It is interesting to note that apart from Kolkata, the fiscal gap and the revenue expenditure need gap for all the UAs are positive while the expenditure gaps are negative. For Kolkata, even the fiscal gap and the gap between revenue and expenditure need are also negative[15]. On the basis

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[15] For Kolkata the gaps are calculated on the basis of data available for all the ULBs excluding KMC and Howrah due to non availability of data on these ULBs.

of our findings, the UAs are ranked in terms of the five indicators mentioned above taking similar groups used for ranking in the previous section[16].

Table 4.4 below gives the ranks of the biggest corporations of the UAs in terms of the indicators of fiscal health. We find that the absolute increase in revenues once the revenue potentials are realized is the maximum in PMC in Pune and minimum in COC in Chennai, both in absolute and relative terms. In terms of fiscal gap, the highest surplus is recorded for Pune while the lowest for MCD in Delhi. For the gap between actual revenues and expenditure need Chennai records the highest value and Pune the lowest. The performance of MCH in Hyderabad is the best in terms of expenditure gaps and that in Chennai is the worst.

Table 4.4: Ranks of Five UAs in India (Biggest ULB)

UA	Biggest ULB	Difference In Per Capita Revenue Capacity And Per Capita Actual Revenue	Ratio Of Revenue Capacity To Total Revenue (%)	Fiscal Gap	Gap Between Actual Revenue And Expenditure Need	Gap Between Actual Expenditure And Expenditure Need
Delhi	MCD	2	3	4	3	2
Pune	PMC	1	1	1	4	3
Hyderabad	MCH	3	2	3	2	1
Chennai	COC	4	4	2	1	4

Source: Authors' Computations

Table 4.5: Ranks of Five UAs in India (Smaller ULBs)

UA	Difference In Per Capita Revenue Capacity And Per Capita Actual Revenue	Ratio Of Revenue Capacity To Total Revenue (%)	Fiscal Gap	Gap Between Actual Revenue And Expenditure Need	Gap Between Total Actual Expenditure And Total Expenditure Need
Kolkata	2	2	4	4	4
Pune	-	-	1	1	1
Hyderabad	-	-	2	2	2
Chennai	1	1	3	3	3

Source: Authors' Computations

Table 4.5 above records the ranks for the group of smaller ULBs of the UAs. It is interesting to note that the smaller ULBs in Hyderabad and the Cantonment Boards in Pune raise higher revenues than prescribed by our revenue capacities, so the measure of flexibility of

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[16] For Expenditure gaps, because of negative values for all the UAs, the lower the absolute value of the gap the higher the rank.

revenue generation in terms of our estimates of revenue capacities do not apply to them. This can be attributed mainly to the smaller size of population in these ULBs and also better revenue generation in the ULBs in per capita terms. Among the other UAs, we find that Chennai performs better than Kolkata in terms of the flexibility in revenue generation, both in absolute and relative terms. In terms of all the gaps related to fiscal health, the smaller ULBs in Pune perform the best by generating the highest surplus followed by Hyderabad and Chennai; Kolkata records negative fiscal gaps on average and records the worst performance in terms of the magnitudes of all the gaps.

Table 4.6 below records the ranks of the UAs taking the biggest corporation and smaller ULBs together in a UA. In terms of flexibility in revenue generation we find that Chennai outperforms Pune and Hyderabad, both in absolute and relative terms. The ranks in terms of the gaps considering the expenditure needs are the same as those generated by the UAs for smaller ULBs group.

Table 4.6: Ranks of Five UAs in India (All ULBs)

UA	Difference In Per Capita Revenue Capacity And Per Capita Actual Revenue	Ratio Of Revenue Capacity To Total Revenue (%)	Fiscal Gap	Gap Between Actual Revenue And Expenditure Need	Gap Between Total Actual Expenditure And Total Expenditure Need
Pune	2	2	1	1	1
Hyderabad	3	3	2	2	2
Chennai	1	1	3	3	3

Source: Authors' Computations

The indicators used for the comparative assessment of fiscal health of the UAs are derived from the estimates of revenue capacity and the expenditure needs[17]. So, the methodologies involved in both the estimations have some influence on these measures. The indicators of flexibility in terms of revenue generation would depend on the levels of actual revenue generation and the factors determining the revenue capacities discussed in the previous section. The fiscal gap, measuring the gap between two normative concepts record positive values for all the UAs excepting Kolkata. This indicates that even if the revenue capacities are realized, Kolkata cannot generate enough revenues to cover the expenditure needs. Also, the average per capita increase in revenues in the most recent year (Rs 146) is not sufficient to cover the expenditure gap which is on an average Rs. 526 in per capita terms (Table A 2.1).

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[17] The details of the descriptive statistics of these indicators for the four UAs are given in Tables A 2.1-A 2.5 in the Appendix. For Delhi we have the analysis based on one ULB ie MCD, so we do not have any variation of these indicators across ULBs. For Kolkata, data for only 2003-04 is available.

For other UAs, it is possible to cover the expenditure needs if the revenue potential is fully utilized, in fact there are surpluses over and above the expenditure need. If we consider actual revenues and assess the situations in the UAs to find whether the actual revenues generated are enough to cover the expenditure needs we see that all the UAs apart from Kolkata can generate surpluses over the expenditure needs even with the actual revenues generated by them. Our next task would be to judge in terms of the actual expenditures incurred and compare them with the expenditure needs of the UAs. We find that all the UAs record negative values of these gaps indicating that all the UAs actually under spend on the basic provision of services, which is also reflected in the quality and quantity of service delivery in the UAs.

The positive values for the fiscal gaps can be consequences of other factors. We have derived the revenue capacities at the ULB level and averaged at the UA level. But the total expenditure needs are calculated on the basic services viz. water supply, sewerage, street lights, sanitation, solid waste management and roads. For UAs like Delhi, Hyderabad and Chennai, parastatal agencies (water supply and sewerage boards) incur expenditures on water supply and sewerage, with slight variations in arrangements between the municipality and the Boards for different UAs. The existence of these agencies makes the process of estimation of expenditure needs difficult at the ULB level. This can lead to overestimated surpluses of fiscal gaps.

Also, in all the UAs, there are services other than these basic services provided by the municipality. For most of these services norms cannot be defined. Some of the services like health, education for which norms are defined were beyond the scope of the study. So, the expenditure need calculated on the basis of the selected services can give underestimated values at the ULB level and thus for the UA as a whole which in turn can cause overestimated fiscal gaps.

The financial norms used for the calculation of expenditure needs are taken at the all India level (apart from Kolkata) as city level norms are not available. The applicability of these norms to the respective cities can be questioned which can alter the estimates for fiscal gaps. However, in the absence of city specific norms, these estimates suit our purpose the best.

Combining the revenue expenditure gaps and the expenditure gaps (apart from Kolkata), we find that for the UAs there is a surplus of revenues over the expenditure needs but there is a 'deficit' in spending on these services. This means that the surplus revenues are spent in other areas. Given the nature of the selected services, it would not be incorrect to conclude that there are possible under- allocations of resources in the UAs on these basic services. Since for these services, the local government is the only provider and there is no alternative for the inhabitants of the cities than to suffer in cases of under provision of these services, the local government

needs to rethink on the orientation of revenue utilization. Better service provision can contribute to sustain the pace of development in these UAs.

Conclusions

We can sum up by highlighting the main findings in a nutshell. The results are subject to some limitations because of non availability of data and the constraints of the estimation techniques. Among the UAs, Kolkata by all aspects of our analysis of fiscal health record a poor performance, probably worst among the UAs in our sample. This is reflected in the negative values of all the gaps including the fiscal gap measure. But we have to mention that these gaps are calculated on the basis of ULBs excluding the two biggest corporations, Kolkata and Howrah for which no data on expenditures were available.

The performances of Hyderabad and Chennai are almost in the same row, in terms of revenue generation and expenditure management, Hyderabad performing slightly better in terms of the measures of the gaps used to assess the fiscal health of the UAs. In fact, in Hyderabad we find a considerable decline in per capita terms, overall and for smaller ULBs , in the expenditure gaps over the most recent years whereas in Chennai the decline in the expenditure gaps over the most recent years have been marginal. (Table A 2.1-A 2.5).

Pune and Delhi show better performance in terms of revenue generation, Pune having an advantage of lower population records better per capita averages. In terms of expenditure gaps, though Pune has lower deficits, the decline over the most recent years in per capita terms in Delhi is higher. However, it is very difficult to assess the overall performance of the UAs other than Kolkata in terms of the combined effects of all the indicators and arrive at a unique comparative ranking of the UAs.

Roughly we can say that Pune performs better than any UA on the whole. In the absence of data on quality and levels of services, we can base our assessments on these on the basis of our experience from the field visits and personal interaction with the people in the city. We find, on the whole, Pune outperforms the other cities in terms of the quality and quantitative aspect of service delivery for all the services chosen for the study. In Delhi, the skewness in the distribution of the quality of services is huge. So, even with better quality roads and solid waste management in some areas, due to very poor quality of these services in others, overall it ranks next to Pune. Pune also has three cantonment boards which have contributed in terms of better management of the UA in terms of sharing of responsibilities. With better utilization of the property tax base, Pune has the potential to do even better than its present performance in terms of revenue generation, even if we anticipate an abolition of octroi in near future.

It seems that for all the UAs expenditure management is a major problem. Proper orientation of the planners in terms of providing the services conforming to acceptable standards

in terms of quality and quantity is required for an effective planning. We find that in most of the categories chosen for the analysis, in all the UAs the expenditure gaps record negative values and only marginal decline in per capita terms over the most recent years (Table A 2.1- A2.5). The problem is more acute in the bigger corporations in Chennai and Pune while in Hyderabad the performance of MCH is marginally better. So it is clear that realising the revenue capacities is one aspect of the solution. A higher revenue potential, even if fully utilized, cannot ensure better services in terms of quality and quantity and higher expenditures incurred on account of providing services. Directing the enhanced resources for proper expenditure management would only complete the reform process. A proper planning in terms of utilizing resources for provision of basic services on priority basis can contribute to the sustainable development of cities.

Appendix

Table A 1.1: GCPs and Revenue Capacities of Five UAs in India (Rs, 99-00)

UA		GCP	Per Capita GCP	Revenue Capacity	Per Capita Revenue Capacity
Kolkata	**With KMC**	78,344,028,863	22,318	3,133,761,155	893
	Without KMC & Howrah	2,074,161,227	11,682	82,966,449	467
	KMC	142,936,734,431	30,765	5717469377	1,231
Delhi	**MCD**	738,500,000,000	49,772	22,150,000,000	1,493
Pune	**With PMC & PCMC**	56,776,168,014	66,440	1,703,285,040	1,993
	Only PMC & PCMC	135,118,191,820	66,440	4,053,545,755	1,993
	Cantonment Boards	4,548,152,143	66,440	136,444,564	1,993
	PMC	190,515,508,426	66,440	5,715,465,253	1,993
Hyderabad	**With MCH**	15,770,314,622	24,613	661,714,271	987
	Without MCH	5,194,267,937	23,923	195,101,272	957
	MCH	121,530,781,477	31,516	4,861,231,259	1,261
Chennai	**With COC**	22,515,324,165	26,202	900,612,967	786
	Without COC	5,364,670,475	25,399	214,586,819	762
	COC	142,569,900,000	31,822	5,702,796,000	1,273

Source: Authors' computations

Table A 1.2: Indicators of Fiscal Health of Five UAs in India (Rs, 99-00)

UA		Difference In Per Capita Revenue Capacity And Per Capita Actual Revenue	Ratio Of Revenue Capacity To Total Revenue (%)	Fiscal Gap	Gap Between Actual Revenue And Expenditure Need	Gap Between Total Actual Expenditure And Total Expenditure Need
Kolkata	**Without KMC & Howrah**	146	169	-219	-365	-526
Delhi	**MCD**	411	139	849	388	-120
Pune	**With PMC & PCMC**	270	167	1,385	1,275	-97
	PMC & PCMC	1,148	258	1,213	196	-169
	Cantonment Boards	-	107	1,467	1,783	-58
	PMC	902	183	1,211	309	-122
Hyderabad	**With MCH**	28	128	770	742	-154
	Without MCH	-	127	760	771	-160
	MCH	372	142	855	483	-119
Chennai	**With COC**	333	182	584	251	-183
	Without COC	343	190	542	199	-169
	COC	265	126	879	614	-264

Source: Authors' computations

Table A 2.1: Descriptive Statistics for the Indicators of fiscal Health (Rs, 99-00) : Kolkata

Revenue capacity	
Without KMC & Howrah	2003-04
Mean	82,966,449
Maximum	189,877,479
Minimum	15,908,363
Std. Deviation	47,077,825
No of Observation	39

Per capita revenue capacity	
Without KMC & Howrah	2003-04
Mean	467
Maximum	602
Minimum	415
Std. Deviation	69
No of Observation	39

Ratio of revenue capacity to total revenue(%)	
Without KMC & Howrah	2003-04
Mean	169
Maximum	487
Minimum	53
Std. Deviation	76
No of Observation	39

Fiscal gap	
Without KMC & Howrah	2003-04
Mean	-219
Maximum	15
Minimum	-650
Std. Deviation	129
No of Observation	39

Revenue- expenditure need Gap	
Without KMC & Howrah	2003-04
Mean	-365
Maximum	176
Minimum	-791
Std. Deviation	177
No of Observation	39

Table A 2.1: Continued

Difference between per capita revenue capacity and per capita actual revenue	
Without KMC & Howrah	2003-04
Mean	146
Maximum	478
Minimum	-363
Std. Deviation	157
No of Observation	39
Expenditure Gap	
Without KMC & Howrah	2003-04
Mean	-526
Maximum	-366
Minimum	-719
Standard Devation	102
Number of Observation	39

Source: Authors' computation

Table A 2.2: Descriptive Statistics for the Indicators of fiscal Health (Rs, 99-00) : Pune

Revenue Capacity		
All ULBs	2003-04	2004-05
Mean	1,594,495,560	1,812,074,521
Maximum	5,359,204,898	6,071,725,608
Minimum	92,606,098	101,443,358
Std. Deviation	2,290,809,455	2,601,958,855
No of Observation	5	5
PMC & PCMC	2003-04	2004-05
Mean	3,789,608,468	4,317,483,041
Maximum	5,359,204,898	6,071,725,608
Minimum	2,220,012,039	2,563,240,474
Std. Deviation	2,219,744,558	2,480,873,630
No of Observation	2	2
Cantonment Boards	2003-04	2004-05
Mean	131,086,954	141,802,175
Maximum	152,467,684	164,158,964
Minimum	92,606,098	101,443,358
Std. Deviation	33,394,058	35,019,516
No of Observation	3	3
PMC	2003-04	2004-05
	5,359,204,898	6,071,725,608

Table A 2.2: Continued

Per capita revenue capacity		
All ULBs	2003-04	2004-05
Mean	1,917	2,069
Maximum	1,917	2,069
Minimum	1,917	2,069
Std. Deviation	0	0
No of Observation	5	5
PMC & PCMC	2003-04	2004-05
Mean	1,917	2,069
Maximum	1,917	2,069
Minimum	1,917	2,069
Std. Deviation	0	0
No of Observation	2	2
Cantonment Boards	2003-04	2004-05
Mean	1,917	2,069
Maximum	1,917	2,069
Minimum	1,917	2,069
Std. Deviation	0	0
No of Observation	3	3
PMC	2003-04	2004-05
	1,917	2,069
Ratio of revenue capacity to total revenue (%)		
All ULBs	2003-04	2004-05
Mean	158	176
Maximum	336	330
Minimum	44	66
Std. Deviation	110	102
No of Observation	5	5
PMC & PCMC	2003-04	2004-05
Mean	256	260
Maximum	336	330
Minimum	176	190
Std. Deviation	113	99
No of Observation	2	2
Cantonment Boards	2003-04	2004-05
Mean	93	120
Maximum	127	194
Minimum	44	66
Std. Deviation	43	66
No of Observation	3	3
PMC	2003-04	2004-05
	2	2

Table A 2.2: Continued

Fiscal Gap		
All ULBs	2003-04	2004-05
Mean	1,327	1,443
Maximum	1,402	1,555
Minimum	1,134	1,287
Std. Deviation	129	138
No of Observation	4	5
PMC & PCMC	2003-04	2004-05
Mean	1,134	1,292
Maximum	1,134	1,298
Minimum	1,134	1,287
Std. Deviation	-	8
No of Observation	1	2
Cantonment Boards	2003-04	2004-05
Mean	1,391	1,544
Maximum	1,402	1,555
Minimum	1,369	1,521
Std. Deviation	19	19
No of Observation	3	3
PMC	2003-04	2004-05
	1,134	1,287
Revenue- expenditure need gap		
All ULBs	2003-04	2004-05
Mean	1,583	968
Maximum	3,799	2,613
Minimum	308	-144
Std. Deviation	1,531	1,107
No of Observation	4	5
PMC & PCMC	2003-04	2004-05
Mean	308	83
Maximum	308	309
Minimum	308	-144
Std. Deviation	-	321
No of Observation	1	2
Cantonment Boards	2003-04	2004-05
Mean	2,008	1,558
Maximum	3,799	2,613
Minimum	958	520
Std. Deviation	1,559	1,047
No of Observation	3	3
PMC	2003-04	2004-05
	308	309

Table A 2.2: Continued

Difference between per capita revenue capacity and per capita actual revenue		
All ULBs	2003-04	2004-05
Mean	64	475
Maximum	1,346	1,442
Minimum	-2397	-1058
Std. Deviation	1,450	1,003
No of Observation	5	5
PMC & PCMC	2003-04	2004-05
Mean	1,086	1,210
Maximum	1,346	1,442
Minimum	826	977
Std. Deviation	367	328
No of Observation	2	2
Cantonment Boards	2003-04	2004-05
Mean	-617	-14
Maximum	411	1,001
Minimum	-2397	-1058
Std. Deviation	1,548	1,030
No of Observation	3	3
PMC	2003-04	2004-05
	826	977
Expenditure Gap		
All ULBs	2003-04	2004-05
Average	-98.49	-94.99
Maximum	-7.47	74.98
Minimum	-172.47	-279.55
Std Deviation.	77.55	158.25
No. of Observation	4	5
PMC & PCMC	2003-04	2004-05
Average	-152.50	-185.47
Maximum	-152.50	-91.39
Minimum	-152.50	-279.55
Std Deviation	NA	133.05
No. of Observation	1	2
Cantonment Boards	2003-04	2004-05
Average	-80.48	-34.67
Maximum	-7.47	74.98
Minimum	-172.47	-225.78
Std Deviation	84.12	166.11
No. of Observation	3	3
PMC	2003-04	2004-05
	-152.50	-91.39

Source: Authors' computations

Table A 2.3: Descriptive Statistics for the Indicators of fiscal Health (Rs, 99-00) : Chennai

Revenue capacity		
All ULBs	2003-04	2004-05
Mean	859,019,681	942,206,252
Maximum	5460,968,000	5,944,624,000
Minimum	89,001,301	100,659,445
Std. Deviation	1,861,475,780	2,023,788,372
No of Observation	8	8
Smaller ULBs	2003-04	2004-05
Mean	201,598,493	227,575,145
Maximum	358,816,893	403,073,758
Minimum	89,001,301	100,659,445
Std. Deviation	93,361,205	108,757,340
No of Observation	7	7
COC	2003-04	2004-05
	5,460,968,000	5,944,624,000
Per Capita Revenue Capacity		
With COC	2003-04	2004-05
Mean	809	763
Maximum	989	920
Minimum	666	656
Std. Deviation	125	97
No of Observation	8	8
Smaller ULBs	2003-04	2004-05
Mean	741	783
Maximum	804	871
Minimum	656	666
Std. Deviation	79	110
No of Observation	7	7
COC	2003-04	2004-05
	1226	1319
Ratio of Revenue Capacity to Total Revenue(%)		
All ULBs	2003-04	2004-05
Mean	184	179
Maximum	399	296
Minimum	83	85
Std. Deviation	104	82
No of Observation	8	8
Smaller ULBs	2003-04	2004-05
Mean	193	186
Maximum	399	296
Minimum	83	85

Table A 2.3: Continued

	2003-04	2004-05
Std. Deviation	109	86
No of Observation	7	7
COC	2003-04	2004-05
	122	131
Fiscal Gap		
All ULBs	2003-04	2004-05
Mean	554	614
Maximum	833	925
Minimum	400	413
Std. Deviation	150	185
No of Observation	8	8
Smaller ULBs	2003-04	2004-05
Mean	514	570
Maximum	603	692
Minimum	400	413
Std. Deviation	106	147
No of Observation	7	7
	2003-04	2004-05
COC	832	925
Revenue- Expenditure Need Gap		
All ULBs	2003-04	2004-05
Mean	239	263
Maximum	821	891
Minimum	-207	-155
Std. Deviation	372	368
No of Observation	8	8
Smaller ULBs	2003-04	2004-05
Mean	185	213
Maximum	821	891
Minimum	-207	-155
Std. Deviation	367	367
No of Observation	7	7
	2003-04	2004-05
COC	615	612
Gap Between Per Capita Revenue Capacity and Per Capita Actual Revenue		
All ULBs	2003-04	2004-05
Mean	314	352
Maximum	804	768
Minimum	-218	-199
Std. Deviation	329	320
No of Observation	8	8
Smaller ULBs	2003-04	2004-05

Table A 2.3: Continued

Mean	328	357
Maximum	804	768
Minimum	-218	-199
Std. Deviation	353	345
No of Observation	7	7
	2003-04	2004-05
COC	217	312
Expenditure Gap		
All ULBs	2003-04	2004-05
Mean	-183.42	-182.43
Maximum	12.43	-17.65
Minimum	-298.31	-302.71
Std. Deviation	124.96	107.62
No of Observation	7	7
Smaller ULBs	2003-04	2004-05
Mean	-169.88	-168.89
Maximum	12.43	-17.65
Minimum	-298.31	-302.71
Std. Deviation	131.15	111.17
No of Observation	6	6
COC	2003-04	2004-05
	-264.65	-263.65

Source: Authors' computations

Table A 2.4: Descriptive Statistics for the Indicators of fiscal Health (Rs, 99-00) : Hyderabad

Revenue capacity		
All ULBs	2003-04	2004-05
Mean	651,349,059	672,079,483
Maximum	4,806,633,068	4,915,829,450
Minimum	96,697,854	100,488,968
Std. Deviation	1,461,251,031	1,492,469,011
No of Observation	10	10
Smaller ULBs	2003-04	2004-05
Mean	189,650,836	200,551,709
Maximum	305,316,779	320,357,197
Minimum	96,697,854	100,488,968
Std. Deviation	63,658,025	67,743,989
No of Observation	9	9
	2003-04	2004-05
MCH	4,806,633,068	4,915,829,450
Per Capita Revenue Capacity		
All ULBs	2003-04	2004-05
Mean	986	989
Maximum	1,260	1,262
Minimum	955	959

Table A 2.4: Continued

Std. Deviation	96	96
No of Observation	10	10
Smaller ULBs	2003-04	2004-05
Mean	955	959
Maximum	955	959
Minimum	955	959
Std. Deviation	0	0
No of Observation	9	9
	2003-04	2004-05
MCH	1260	1,262
Difference in revenue Capacity and Actual Revenue		
All ULBs	2003-2004	2004-2005
Average	2	53
Maximum	581	716
Minimum	-662	-628
Standard Deviation	390	428
No. Of Observation	10	10
Smaller ULBs	2003-2004	2004-2005
Average	-35	14
Maximum	581	716
Minimum	-662	-628
Standard Deviation	394	435
No. Of Observation	9	9
MCH	2003-2004	2004-2005
	341	404
Ratio of Revenue Capacity to Total Revenue(%)		
All ULBs	2003-2004	2004-2005
Average	118	139
Maximum	255	395
Minimum	59	60
Standard Deviation	57	99
No. Of Observation	10	10
Smaller ULBs	2003-2004	2004-2005
Average	116	138
Maximum	255	395
Minimum	59	60
Standard Deviation	60	105
No. Of Observation	9	9
MCH	2003-2004	2004-2005
	137	147
Fiscal Gap		
All ULBs	2003-2004	2004-2005
Average	768	771
Maximum	872	876

Table A 2.4: Continued

Minimum	665	669
Standard Deviation	106	106
No. Of Observation	10	10
Smaller ULBs	2003-2004	2004-2005
Average	759	762
Maximum	872	876
Minimum	665	669
Standard Deviation	108	108
No. Of Observation	9	9
MCH	2003-2004	2004-2005
	854	856
Difference between actual revenue and expenditure need		
All ULBs	2003-2004	2004-2005
Average	766	718
Maximum	1,348	1,303
Minimum	291	160
Standard Deviation	402	396
No. Of Observation	10	10
Smaller ULBs	2003-2004	2004-2005
Average	794	748
Maximum	1,348	1,303
Minimum	291	160
Standard Deviation	416	408
No. Of Observation	9	9
MCH	2003-2004	2004-2005
	513	452
Expenditure Gap		
All ULBs	2003-04	2004-05
Average	-162.29	-145.22
Maximum	-58.79	-63.05
Minimum	-243.3	-247.82
Standard Deviation	75.978	80.068
No. of Observation	7	7
Smaller ULBs	2003-04	2004-05
Average	-168.85	-150.19
Maximum	-58.79	-63.05
Minimum	-243.30	-247.82
Standard Deviation	81.03	86.52
No. of Observation	6	6
MCH	2003-04	2004-05
	-122.92	-115.42

Source: Authors' computations

Table A 2.5: Descriptive Statistics for the Indicators of fiscal Health (Rs, 99-00) : Delhi

Revenue capacity		
MCD	2003-04	2004-05
	20,800,000,000	23,500,000,000
Per Capita Revenue Capacity		
MCD	2003-04	2004-05
	1,432	1554
Difference in revenue Capacity and Actual Revenue		
MCD	2003-2004	2004-2005
	413	409
Ratio of Revenue Capacity to Total Revenue(%)		
MCD	2003-2004	2004-2005
	141	136
Fiscal Gap		
MCD	2003-2004	2004-2005
	788	910
Difference between actual revenue and expenditure need		
MCD	2003-2004	2004-2005
	400	375
Expenditure Gap		
MCD	2003-04	2004-05
	-132	-107

Source: Authors' computations

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