

# **Improving the Fiscal Health of Indian Cities: A Pilot Study of Delhi**

**Draft Report Submitted by the**

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Any errors remain with the authors.

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## CHAPTER 1

### DELHI: BACKGROUND

#### Introduction

With a land area of 1,483 square kilometers and a population of 13.85 million, Delhi is the most dense area of the country with a population density of 9,340 persons per square kilometer, compared with a national average of 324 persons per square kilometer. The Delhi Urban Agglomeration (UA) consists of three local bodies -- one is a municipal corporation (Municipal Corporation of Delhi (MCD)), one is a municipal council (the New Delhi Municipal Council (NDMC)) and a Cantonment Board (Delhi Cantonment Board (DCB)). We observe from Table 1.1 that MCD is the largest local body covering more than 94 per cent of the UA's total area and nearly 97 percent of its population.

**Table 1.1: Summary of Land Area, Population and Population Density, Delhi's Local Governments**

Local Government/Characteristic↓ Year→	Land Area (in Square Kilometres)		Population		Population Density (Persons per square kilometre)	
	1991	2001	1991	2001	1991	2001
Delhi	1,483	1,483	9,420,644	13,850,507	6,352.42	9,339.52
MCD	1,397.29	1,397.29	9,024,954	13,423,227	6,458.90	9,606.61
MCD's land area/population as a proportion of Delhi land area/population	94.22%	94.22%	95.80%	96.92%		
NDMC	42.74	42.74	301,297	302,363	7,049.53	7,074.47
NDMC's land area/population as a proportion of Delhi land area/population	2.88%	2.88%	3.20%	2.18%		
Delhi Cantonment	42.97	42.97	94,393	124,917	2,196.72	2,907.07
DCB's land area/population as a proportion of Delhi land area/population	2.90%	2.90%	1.00%	0.90%		

*Source:* Delhi Statistical Handbook, 2006, and Authors' computations.

Population density has increased in all the ULBs as well as in the UA as a whole, during 1991-2001, the extent of increase differing considerably. Even here, we find that MCD recorded a higher percentage change in population density than that recorded by Delhi as a whole while the

cantonment area recorded a lower percentage increase. The NDMC recorded the lowest increase in density over the two census years. This indicates the need for improving public service levels in all the areas, specially so in the MCD.

Delhi is divided into 9 districts for the sake of administrative convenience. Table 1.2 summarizes socio-demographic characteristics of the districts. Population density is highest in the Northeast, while the largest district is the North West, which also contains one-fifth of the population of the state. The sex ratio is the most favorable at 849 in the North East, compared with a ratio of 821 for the state, whereas the literacy rate is highest in the East at 85 percent. Finally the workforce participation rate is the highest in New Delhi at 38 percent, whereas it is the lowest at 28 percent in the North East.

**Table 1.2: Socio-Demographic Characteristics, Delhi Districts**

<b>District</b>	<b>Population</b>	<b>% to total Population of State</b>	<b>Density</b>	<b>Sex Ratio</b>	<b>Literacy Rate</b>	<b>Workforce Participation Rate</b>
North-West	2,860,869	20.65	6502	820	80.57	32.14%
South	2,267,023	16.37	9068	799	81.96	34.34%
West	2,128,908	15.37	16503	830	83.39	33.86%
North-East	1,768,061	12.77	29468	849	77.53	28.30%
South-West	1,755,041	12.67	4179	784	83.61	34.33%
East	1,463,583	10.57	22868	843	84.91	32.48%
North	781,525	5.64	13025	826	80.1	32.83%
Central	646,385	4.67	25855	842	79.69	34.63%
New Delhi	179,112	1.29	5117	792	83.24	37.74%
<b>Total</b>	<b>13,850,507</b>	<b>100.00</b>	<b>9340.00</b>	<b>821.00</b>	<b>81.67</b>	<b>32.82%</b>

*Source:* Delhi Statistical Handbook, 2006

### **Socio-Demographic Profile**

The provision of public service delivery is in some ways related to a city's per capita income because of the following reasons.

- a. The city's residents are likely to be more educated and aware of the need for adequate levels of public services;
- b. The city's revenue raising potential and consequent spending on public services are also likely to be high.

Table 1.3 gives a snapshot of the gross state domestic product of Delhi at constant 99-00 prices. The non-primary sector comprising of the secondary and the tertiary sectors account for more than 98 percent of the GSDP in all the years, not surprising, given the Census definition of minimum of 75 percent non-agricultural activity for urban areas. Because of this, it would not be inaccurate to consider the non-primary GDP of the state of Delhi as a proxy for the city level GDP. Overall, the non-primary GSDP for the state per capita has been increasing over time.

Delhi's per capita income is also consistently above the all India average over time. Then, based on the above, we should be optimistic about public service delivery in Delhi. We will wait to discuss this in the following sections.

**Table 1.3: Gross State Domestic Product for Delhi (in Rupees, Constant 1999-00 prices)**

Year	Proportion of Non-Primary GSDP in Total	Non-primary GSDP Per Capita
1995-96	98.30%	32,821.60
1996-97	98.60%	35,773.58
1997-98	98.50%	39,648.99
1998-99	98.20%	39,820.11
1999-00	98.50%	40,194.07
2000-01	98.40%	43,993.54
2001-02	98.50%	43,977.22
2002-03	98.60%	44,731.95
2003-04	98.80%	47,730.39
2004-05	98.90%	51,812.74

*Source:* Delhi Statistical Handbook 2006 and Authors' Computations.

The monthly per capita expenditure consistent with the poverty line for urban Delhi increased from Rs.67.95 in 1973-74 to Rs.454.11 in 1999-00 (Report of the Expert Group on Estimation of Proportion and Number of Poor, Planning Commission, Govt. of India, July, 1993 & March, 1997). Consistent with the income data of the state of Delhi, and that of all India, the population below the poverty line has continuously declined in Delhi since the 1980s (except a small spike in 1993-94 when the poverty rate increased) and is just around 8 percent, as of 1999-2000, compared with 26 percent with that for all India (Table 1.4).

**Table 1.4: Poverty Line in Delhi and All-India**

Year	Delhi, Rural	Delhi, Urban	Delhi, Combined
<b>1983</b>			
Number (in lakhs, i.e., 00,000)	0.44	17.95	18.39
Percentage	7.66	27.89	26.22
<b>1987-88</b>			
Number (in lakhs)	0.1	10.15	10.25
Percentage	1.29	13.56	12.41
<b>1993-94</b>			
Number (in lakhs)	0.19	15.32	15.51
Percentage	1.9	16.03	14.69
<b>1999-2000</b>			
Number (in lakhs)	0.07	11.42	11.49
Percentage	0.4	9.42	8.23
<b>Poverty Line, All India</b>			
<b>1993-94</b>			
Number (in lakhs)	2440.31	762.37	3202.68
Percentage	37.27	32.36	35.97
<b>1999-2000</b>			
Number (in lakhs)	1932.43	670.07	2602.5
Percentage	27.09	23.62	26.1

Source: Delhi Statistical Handbook, 2006.

## Literacy and Education

Delhi's population is one of the most educated and literate in the country. Table 1.5 summarizes Delhi's literacy rate historically which has been continually rising, and one of the highest in the country as of 2001, at 82 percent, when compared with an average of 65 percent literacy for all India in 2001. While male literacy, at 87 percent, has always been higher than that for females even in Delhi, female literacy being 75 percent as of 2001, is also above the national average of 54 percent.

Table 1.6 summarizes the number of government schools in Delhi in the recent years. We find that while the number of pre-primary schools has not changed much since 2001-02, the number of primary, secondary and senior secondary schools has gone up steadily since 2001-02 to 2004-05.

**Table 1.5: Literacy in Delhi Over Time**

Year	Total Population	Literate Persons					
		Male		Female		Total	
		Number	%	Number	%	Number	%
1931	636246	73377	19.86	16095	6.03	89472	14.06
1941	917939	171233	31.99	58370	15.25	229603	25.01
1951	1744072	424118	42.99	244955	32.34	669073	38.36
1961	2658612	904801	60.75	497497	42.55	1402298	52.75
1971	4065698	1438268	63.71	863337	47.55	2301605	56.61
1981	6220406	2352883	68.4	1475443	53.07	3828326	61.54
1991	9420644	3539500	82.01	2342797	66.99	5882297	75.29
2001	13850507	5700847	87.33	3963917	74.71	9664764	81.67

Source: Delhi Statistical Handbook, 2006.

**Table 1.6: Government Schools under Directorate of Education**

Year	Pre-Primary	Primary	Middle	Secondary/ Senior Secondary
2001-02	49	2406	649	1605
2002-03	52	2111	661	1619
2003-04	52	2126	681	1678
2004-05	52	2463	635	1712

Source: Delhi Statistical Handbook, 2006.

Table 1.7 gives a snapshot of enrollment in Delhi's government schools. We find that the enrollment at the pre-primary and senior secondary levels have continuously increased, whereas enrolment in primary and middle schools has decreased somewhat steadily (with a few exceptions). This indicates the declining importance of government schools at the primary level.

**Table 1.7: Enrollment in Delhi's Government Schools**

Year	Pre-Primary	Primary	Middle	Secondary/Senior Secondary
2001-02	40463	1046708	238846	1483937
2002-03	52536	905443	225477	1711737
2003-04	53834	924493	230362	1727742
2004-05	54972	944493	235292	1785687

Source: Delhi Statistical Handbook, 2006.

Table 1.8 gives an overview of the number of institutions of higher education in Delhi. While the number of universities and institutions of national importance have not changed,

number of deemed universities, number of colleges for general education and professional education has increased.

**Table 1.8: Institutions of Higher Education in Delhi Over Time**

Year	Universities	Deemed Universities	Institutions of National Importance	Colleges For General Education	Colleges for Professional Education
2001-02	5	6	2	63	77
2002-03	5	8	2	63	81
2003-04	5	8	2	63	81
2004-05	5	8	2	83	81

*Source:* Delhi Statistical Handbook, 2006

Table 1.9 gives an overview of the increasing enrollment in higher educational institutions in the recent years. These data indeed lend legitimacy to the nation's capital as an important center of higher learning.

Table 1.10 gives an idea about the quality of Delhi's labor force from employment exchange statistics in terms of type of profession. By category of profession we find the highest number registered for employment is under the head 'professional and technical.' This is not surprising with a large number of technical and professional institutions of higher education in the nation's capital.

**Table 1.9: Enrollment in Delhi's Higher Educational Institutions**

Year	Enrollment in Higher Educational Institutions (Universities, Colleges & other institutions)
2001-02	170,085
2002-03	181,875
2003-04	168,564
2004-05	260,632

*Source:* Delhi Statistical Handbook, 2006 and authors' computations

**Table 1.10: Occupational distribution of applicants registered in Employment Exchange by Type of Employment**

Occupational Category	2004-05
Professional & Technical	120,772
Administrative, Executive & Managerial	429
Clerical	34,873
Sales	110
Farmers, Fisherman, Hunters, Loggers	2,087
Production & Transport Equipment operators	41,661
Service	7,544
Unskilled	67,306
Not classified elsewhere	399,070

*Source: Delhi Statistical Handbook, 2006.*

The high literacy rate and the existence of world-class institutions of higher learning has spurred the printing and publishing industry in Delhi, with over 340 registered printing presses as of 2003 (Delhi Statistical Handbook, 2006). As of 2004, the number of daily newspapers (including 70 in English, 231 in Hindi and remaining in other languages) was 386, and total number of all periodicals (apart from newspapers) was 8,204 including 2,925 in English alone. This suggests high newspaper circulation and readership in Delhi, not surprising given its high literacy rate. This should serve as an indicator as demand for better public services such as safe drinking water, adequate sewerage treatment and disposal, adequate roads and public safety. This is because the media can do much to disseminate information and improve service delivery by encouraging public discourse on various aspects. This can serve as an accountability mechanism for the local government to the public, as the World Development Report (2004) points out.

## **Economic Base**

As a major proportion of the state of Delhi is predominantly urban, we expect an increasing role for manufacturing and services, and a declining one for agriculture.

Table 1.11 summarizes the growth over 1990-98 in enterprises and employment by sector for Delhi. There is a clear decline in the role of agriculture, allied activity and mining/quarrying over this period at least as far as the number of enterprises is concerned. Employment in these areas registered a small increase. Only one non-agricultural activity, storage and warehousing, registered a decline in its contribution to the state's economic activity.

**Table 1.11: Agriculture & Non-Agricultural Economic Activities under Economic Census in Delhi 1990 and 1998, ECONOMIC CENSUS**

Major Economic Group	1998 Annual Growth Rate	
	No. of Enterprises	Employment
PRIMARY SECTOR	NA	NA
(except crop production & Plantation)		
AGRICULTURAL		
Raising of livestock	NA	NA
Agricultural Services	NA	NA
Sub-Total	(-)0.36	0.97
Secondary Sector		
Mining and Quarrying	(-)12.50	(-)12.50
Manufacturing & Repair Services	5.06	15.78
Electricity, Gas & Water	2.15	57.94
Construction	5.97	13.11
Sub-Total	5.08	16.62
Tertiary Sector		
Wholesale Trade	4.32	6.31
Retail Trade	4.5	7.22
Restaurants & Hotels	5.04	5.49
Transport	37.9	15
Storage & Warehousing	(-)6.50	(-)2.21
Communication	224.49	11.32
Financing Insurance Real-estate & Business Services	3.38	0.86
Community, Social & Personal Services.	10.3	2.43
Sub-Total	6.85	4.64
<b>Grand Total</b>	<b>6.35</b>	<b>8.49</b>

Source: Directorate of Economics & Statistics. Govt. of National Capital Territory of Delhi.

Over the period 1990-98, manufacturing and services have registered a huge increase, both in terms of the number of enterprises and employment, the greatest increase being in the number of communications enterprises (growth in the number of enterprises being a 224 percent increase). Employment in electricity, gas and water also registered a substantial increase (58 percent).

The fifth Economic Census of India (2005) indicates that the non-agricultural enterprises are primarily concentrated in the Northwest, West and Southern districts of Delhi, which contain 45 percent of all non-agricultural enterprises, and account for 52 percent of the state's population.

A city might grow in terms of population, but its productivity might increase, stay constant, or decrease. The signs of a growing city are that its productivity increases. Table 1.12 summarizes gross value added (GVA) per enterprise and per worker for Delhi, a measure of productivity. The GVA per enterprise and per worker is the highest for hotels and for storage and

warehousing respectively. The high value added per worker in storage and warehousing is partly a reflection of the fact that there was a reduction in employment in this sector during 1991-98 (Table 1.12).

Au and Henderson (2005) model and estimate real incomes per worker against city employment, using data for China's cities. Unfortunately we do not have data on gross value added for more than one year to corroborate if Delhi's productivity has been growing.

**Table 1.12: Unorganised Services Sector in Delhi, Annual Gross Value Added**

<b>Sector Description</b>	<b>Per Enterprise (Rs.)</b>	<b>Per Worker (Rs.)</b>
Hotels	460585	65695
Restaurants	96282	35830
Storage and Warehousing	270551	126821
Mechanized Road Transport	71983	63385
Other Trpt & Related Activity	63456	50151
Communication	74018	27226
Real Estate, Renting & Business Activities	183517	63636
Education	234482	62596
Health & Social Work	131072	44599
Other Community, Social & Personal service activities & other transport.	249077	107294
<b>Total</b>	<b>152250</b>	<b>62998</b>

*Source:* 52<sup>nd</sup> Round of Socio-Economic Survey, 1995-96, Directorate of Economics & Statistics, Government of National Capital Territory (NCT) of Delhi.

## **Overview of Public Services**

At the beginning, we hypothesized that being one of the highest income and educated states of the country with high literacy rate and a large number of institutions of higher education of international standards, the level of public service delivery in Delhi will be adequate.

Table 1.13 summarizes the sources and location of drinking water for households in Delhi, both rural and urban. While a majority (93 percent) of the state's households are urban, overall, 75 percent have access tap water, with the next major source of drinking water being the hand pump (for 19 percent of households). In contrast with 77 percent of urban households in the state who have access to tap water, only 52 percent of rural households have access to taps for their drinking water. Nearly 75 percent of urban households had access to drinking water on their premises whereas only 62 percent of rural household have access on their premises. Overall, of the urban households that had access to drinking water within their premises, 83 percent had access to tap water, but only 62 percent of rural households in the state had access to tap water

within their premises. If nothing, this table just serves to remind one of the disparities in access to such a basic service like water across rural and urban households.

Thus, if we cannot do anything about public service delivery for the urban areas, it would be much more difficult to do so in the rural areas.

**Table 1.13: Sources of Drinking Water in Rural and Urban Delhi**

Rural/Urban	Location	Households	Source of Drinking Water				
			Tap	Handpump	Tubewell	Well	Others
Total	Total	2,554,149	75.33%	18.68%	3.23%	0.04%	2.72%
	Within Premises	1,912,467	82.22%	14.83%	2.75%	0.01%	0.19%
	Near Premises	463,024	58.32%	33.44%	3.79%	0.04%	4.41%
	Away	178,658	45.76%	21.56%	6.95%	0.33%	25.40%
Rural	Total	169,528	51.56%	33.52%	5.00%	0.36%	9.56%
	Within Premises	105,680	61.99%	33.49%	4.07%	0.02%	0.43%
	Near Premises	34,900	38.89%	42.20%	4.02%	0.24%	14.64%
	Away	28,948	28.79%	23.13%	9.57%	1.74%	36.77%
Urban	Total	2,384,621	77.02%	17.62%	3.11%	0.02%	2.23%
	Within Premises	1,806,787	83.40%	13.74%	2.67%	0.01%	0.18%
	Near Premises	428,124	59.90%	32.73%	3.77%	0.03%	3.58%
	Away	149,710	49.04%	21.26%	6.44%	0.06%	23.20%

Source: Delhi Statistical Handbook, 2006.

Table 1.14 summarizes that for Delhi as a whole, nearly 40 percent of rural and 30 percent of urban households do not have bathroom facilities within their homes. Nearly two-thirds of urban households do not have water closets for their latrines. Roughly half of urban households do not have closed drainage for wastewater outlet, and 9 percent of urban and nearly one-fourth of rural households do not even have a drainage outlet, let alone closed. So much needs to be desired as far as Delhi is concerned with regard to sanitation and sewerage.

## Overview of Report

This report is organized as follows. Chapter 2 deals with the largest local government, the MCD and its finances and services. Chapter 3 focuses on the Delhi Jal Board, the provider of water supply to the MCD. Chapter 4 relates to the smaller local governments, NDMC's and DCB's finances. The final Chapter 5 summarizes our discussion of expenditure needs, revenue capacities and fiscal gaps for Delhi.

**Table 1.14: Summary of Sanitation Facilities in Rural and Urban Delhi**

	<b>Total</b>	<b>Rural</b>	<b>Urban</b>
Total number of households	2,554,149	169,528	2,384,621
Percentage of households having bathroom facility within the house	71.01%	60.99%	71.72%
Type of latrine within the house	Pit latrine	23.04%	21.17%
	Water closet	64.04%	66.03%
	Other latrine	22.71%	23.00%
	No latrine	22.04%	20.97%
Type of connectivity for wastewater outlet	Closed drainage	13.65%	51.68%
	Open drainage	40.78%	39.35%
	No drainage	10.06%	8.96%

Source: Delhi Statistical Handbook, 2006

## **CHAPTER 2**

### **FINANCES OF THE MUNICIPAL CORPORATION OF DELHI**

In the capital city of India, Municipal Corporation of Delhi (MCD) is the largest urban local government out of the total three urban governments. This government takes care of more than 94% area of the entire city and about 95.8% of total population of the state of Delhi, as described in Chapter 1. In 2001 MCD's population was 13 million, growing at a rate of 44 percent from 9 million in 1991. The number of households in the MCD was 1.9 million in 2001 growing at a rate of 36 percent from 1.4 million. The literacy rate was 77 percent in 1991 and 72 percent in 2001. Given the public in Delhi area are well educated and able to pay high tax, they expect better public services from MCD. These conditions contribute to demand for improving sewerage, solid waste collection and providing adequate and safe water supply.

While comparing MCD with the other two local bodies (NDMC and DCB) in Chapter 1, we have learnt that NDMC & Delhi Cantonment Board, cover only a small part (both together covering less than 5 percent of land area or population) of the Delhi UA. The population in NDMC was 0.3 million in 2001 and in Delhi Cantonment total population was 0.1 million, while it was 13 million in MCD. The picture is similar for the number of households. In 2001, the number of households was 1.9 million in MCD and only 0.7 million in NDMC. These data in essence indicate that MCD is the primary urban local body in Delhi with a huge responsibility to provide better level and quality of services.

#### **Revenues of MCD: Facts and Findings**

This section gives an overview of the components of revenues collected by MCD. In course of the discussion we analyse the data collected from MCD budgets for a span of eleven years (1994-95 to 2004-05), followed up subsequently with MCD officials for clarifications. We analyse the data from different angles starting from the respective proportions of each revenue head and then deriving some per capita measures of each component and analyzing their behavior with time.

The total revenue consists of its own sources and the external sources. Own sources consist of the tax and non tax revenues. The most important taxes MCD imposes are house tax, tax on sale and supply of electricity and toll tax. The important components of non tax revenues are fines against law, fines from cattle pounds, fees from hospitals, fees from vehicles licenses, process fees, cost of law receipts, rent on lands and buildings, fines for offences undertakings, reimbursement of debt charges, development and transfers from other account, rents on market

and slaughter houses, receipts from licensing and removal of encroachment, license for hawking carts and improvement schemes.

We find that over our study period (1994-95 to 2004-05), on average, the property tax contributes the lion's share which is around 75 percent of the total tax revenue while the other taxes as a whole contribute 25 per cent. If the proportions are taken in terms of total revenue the share of property taxes turns out to be 47.5 per cent whereas that of the other taxes is 16 per cent. The own revenue consists of the tax and non tax revenues of which the tax revenue has a share of as high as 87 percent.

The external sources comprise of assigned taxes (consisting mostly of motor vehicles tax and entertainment tax) and non plan grant in aid (major head being for education). For Delhi, assigned taxes account for around 66 per cent of total transfers. The total revenue reflects a higher share (73 percent) for own sources while for the remaining 27 per cent the MCD is dependent on external sources. Table 2.1 shows the composition of MCD revenues and their respective proportions, which are averages over the time period of our study.

From the proportions stated in Table 2.1, it is clear that property taxes can be one of the major determinants of the fate of the MCD accounting for as high as 47.5 per cent of total revenues. New methods of valuation and self assessment of properties introduced in 2002 according to the unit area method has though given positive results initially, a drastic fall in revenues are noted in the following phases. This is a phenomenon which is common to all ULBs following unit area method in India and not specific to MCD. Collection efficiency Figures for MCD are not available for our study period but for 06-07 it is as low as 32 per cent.<sup>1</sup>

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<sup>1</sup> Source: Discussion with MCD officials

**Table 2.1: Composition of MCD Revenue**

<b>Proportions</b>	<b>Average</b>
Proportion of Property Tax to Total Tax Revenue	75%
Proportion of other Taxes to Total Tax Revenue	25%
Proportion of Taxes to own Revenue	87%
Proportion of Non Tax to own Revenue	13%
Proportion of Assigned Taxes to Total Transfers	66%
Proportion of Grants In Aid to Total Transfers	34%
Proportion of Own Revenue to Total Revenue	73%
Proportion of Total Transfers to Total Revenue	27%
Proportion of Property Tax to Total Revenue	47.5%
Proportion of other Tax to Total Revenue	16%
Proportion of Non Tax to Total Revenue	10%
Proportion of Grants to Total Revenue	9%
Proportion of Assigned Taxes to Total Revenue	17.5%

*Source:* MCD Budget Documents, 1994-95 to 04-05, Authors' Computations

Table 2.2 reports the average per capita revenues for MCD for the period of study. We find that the per capita total revenue of Rs. 905.60 consists of Rs 661.85 of own revenue and Rs 243.75 of transfers. Per capita total tax revenue amounts to Rs 570.41 while the per capita non tax revenue is around Rs. 91.45.

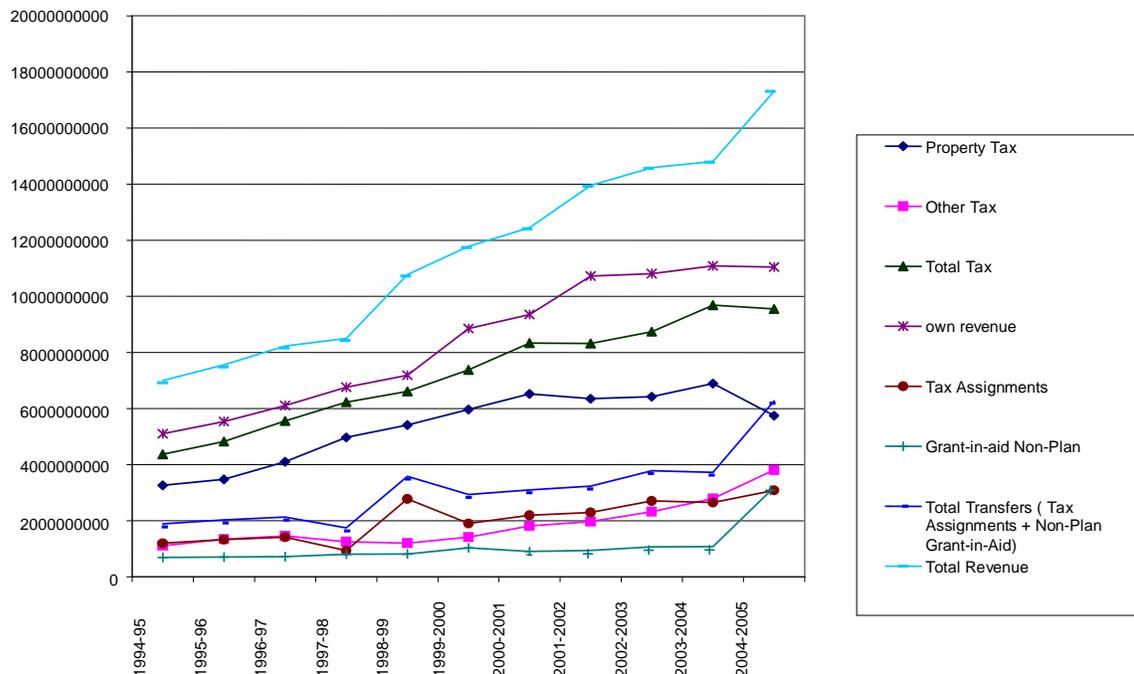
**Table 2.2: Per Capita Revenues of MCD**

<b>Per Capita Revenue Heads</b>	<b>Averages (Rs, 99-00 Prices)</b>
Per Capita Property Tax Revenue	425.78
Per Capita Other Tax Revenue	144.62
Per Capita Total Tax Revenue	570.41
Per Capita Non Tax Revenue	91.45
Per Capita Own Revenue	661.85
Per Capita Assigned Taxes	159.93
Per Capita Grants	83.82
Per Capita Total Transfers	243.75
Per Capita Total Revenue	905.60

*Source:* MCD Budget Documents, 94-95 to 04-05, Authors' Computations

The following Figures throw some light on the behavior of the components of revenues in absolute and per capita terms over time.

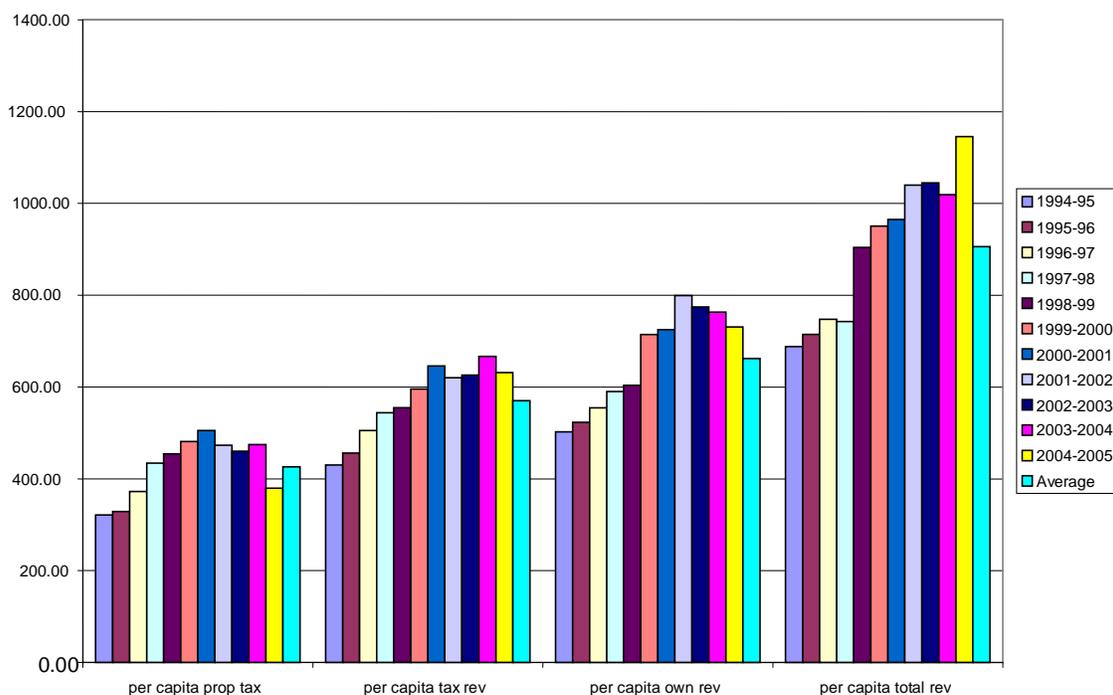
**Figure 2.1: Components of Total Revenue (99-00 prices): Some Trends**



From the figure 2.1 it is clear that over the years all the components of revenues in absolute terms have shown an increasing trend. There are some ups and downs in the components of transfers which can be better explained by political factors. In own revenues the property tax shows a sudden decrease in 04-05 which is caused by the introduction of the new Unit Area Method<sup>2</sup> for tax assessment. It is interesting to note that in spite of a fall in property taxes in 04-05, the total revenues have increased due to a drastic increase in the transfers component. Also we find that total revenue has fallen in 97-98 due to a fall in the transfers component though own revenues did not record a fall that year. This shows that transfer payments are often the determining factor for a rise or fall of revenues in MCD.

<sup>2</sup> A resolution was passed in 2002 followed by an Act (Amendment) in 2003 to introduce the Unit Area Method, before which the assessment was based on Ratable Value Method, based on the rent calculations of land and properties and applying a tax rate ranging between 10 to 30% depending upon the annual ratable value, after some concessions on account of maintenance.

**Figure 2.2: Per capita revenues of MCD (Rs. 99-00 prices)**



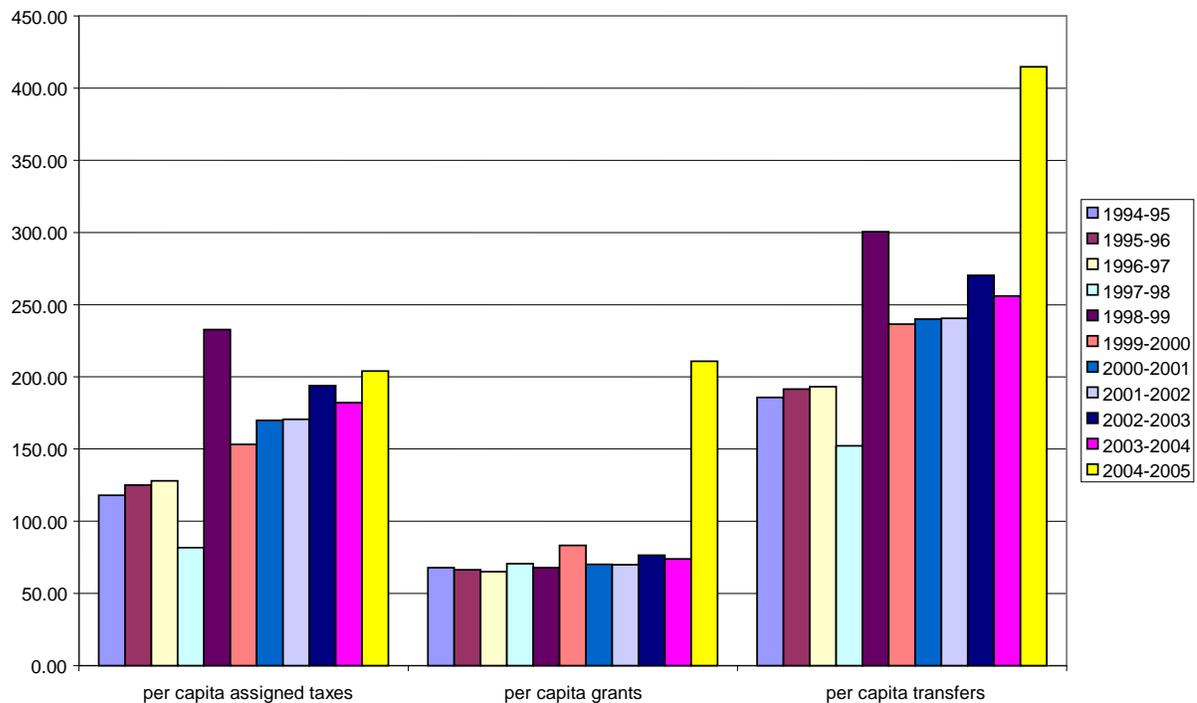
In figure 2.2, we find that per capita property tax has increased steadily from 94-95 till 2000-01. Over the following two years of decline it rises again in 2003-04 and then falls considerably in 2004-05. The initial rising trend is justified given the substantial growth in real estates in MCD area during the latter half of nineties which is capable of offsetting the rise in population. The fall during 01-02 to 02-03 is driven by the increase in population and slight decrease in absolute levels of taxes possibly due to lower collection efficiency<sup>3</sup>. However the subsequent rise in 03-04 and then a fall in 04-05 can be attributed to the change in the method for assessment of property values from ratable value method to unit area method. The unit area method shows some positive results in the initial phase but later it is responsible for a fall in property taxes, both in absolute and in per capita terms. The trend in the per capita tax revenue is the same as that observed in per capita property taxes. Per capita total revenues however have shown an increasing trend (only with a negligible fall in 97-98 of the order of Rs. 5) till 02-03 after which it falls in 03-04 but rises in 04-05. The rise in total revenues in 04-05 in spite of the

<sup>3</sup> Figure 2.1 on absolute levels of revenues.

fall in its own source revenue can be attributed to a considerable increase in the transfers which seems to outweigh the negative impact of the fall in per capita own source revenues. The figure 2.3 makes the point clearer.

The figure 2.3 shows the behavior of different components of transfers of MCD in per capita terms over time. We find that while per capita grants are more or less stable except for the year 2004-05 which is caused by a change in allocation pattern, assigned taxes does not show any regular pattern in behavior over time. Because of a greater share of assigned taxes in transfers of MCD for all the years, no regular pattern is observed in the total transfers over time for MCD. However the rise in total transfers in 04-05 is very prominent as it is caused by both the components.

**Figure 2.3: Per capita transfers for MCD (Rs, 99-00 prices)**



## Property Tax:

For property tax collection, the MCD has been following unit area value method since 2002. Before this the ratable value method was being applied in MCD.<sup>4</sup> Following are the features of UAM adopted by the MCD:

1. It is based on fixing the unit rate per square meter or square feet of property for calculation of the tax;
2. The tax for a particular property is arrived at by multiplying this unit rate by the area of the property and the multiplication of factors of location, age, structure and use. Thus the UAM is a more objective method of assessing property and its taxable value, and is simple, mathematical and transparent.

On the basis of ten factors *viz.* estimated capital value of land, prevailing rental values, the age of the colony, the physical infrastructure, the level of services, the street on which the colony is located approach to the colony), type of colony (planned or unauthorized), economic status of occupants and the geographical location of the colony. A classification matrix was devised. The factors were graded 'A' to 'C' based on the specific characteristics of each parameter. The grade scales were converted into a point scale and the colonies were placed in descending order of 'A' to 'G' on a scale of 100 points.

The valuation per unit area for different slabs of property (with A being the most expensive and H being the least) in the MCD is given in Table 2.3. In the categories in the table, A is the most expensive & H is the least. It is clear that the UAM method is objective & is based on characteristics such as carpet area, age and type of building and land use.

**Table 2.3: Value of Properties in MCD, Unit Area Method**

Category of Property	A	B	C	D	E	F	G	H
Unit Area Value (in Rupees/square meter)	630	500	400	320	270	230	200	100

*Source:* Office of the Property Assessor & Collector, South Zone, New Delhi.

The tax for a particular property is based on the annual value of the property arrived at by multiplying unit area value assigned to the colonies/localities by the covered area and the multiplicative factors for occupancy, age, structure and use, given below. As an illustration, the

<sup>4</sup> There were lots of problems in the "Old Tax Administration" such as:

- The number of properties under one inspector was quite large, up to 41,000, which was difficult to handle, in an era of rapid construction and expansion.
- There was no provision for payment of tax on self assessment basis and the tax became due only after assessment which generally used to take 3-4 years from the date of issue of notice, deferring collection of revenue.

The other two local governments, i.e., NDMC and DCB, continue to apply the rateable method of valuation though they are in the process to impose the unit area method (UAM).

following weights are applied to properties with various characteristics of type, building age, occupancy status and land use characteristics.

- Weights for **structures**: Pucca (brick and cement buildings): 1; Semi-pucca (buildings with some mud and cement combined): 0.7; Kutcha (buildings made of straw, wood, bamboo and so forth): 0.5
- Weights for **occupancy status**: Self (owner) occupied: 1; Rented out: 2;
- Weight for **building age**: Prior to 1960:0.5; 1960-69: 0.6; 1970-79:0.7; 1980-89:0.8; 1990-99:0.9; 2000 onwards: 1;
- Weight for **use factor**: Public purpose: 1; Utility: 2; Industry, entertainment, recreation: 3; Business: 4; Star hotels: 10 (residential uses are accounted for in occupancy status). Thus the UAM method enables property owners to pay tax by filing a self-assessment return, based on the above weights.

After deducting the tax rebate from the annual value, the rates are being imposed in the following manner: 6% for categories F, G, H, 10% for categories A, B, C, D, and E, and 15% for non—residential activity, 20% for towers, hoardings and 3 star hotels and above.

In the ‘old system’ i.e., up to 31.03.2004, 9,63,119 bills were being issued to the tax payers. Against this only 6,50,381 tax payers used to make payment of property tax. The total collection during the year 2003-04 was Rs. 920.10 crores (in current prices). After implementation of UAM, in the year 2004-05, up to 31.03.2005, almost 745,850 tax payers filed their returns and the tax collection was Rs. 817.93 crores (again in current prices). Though the overall collection in this year was reduced but roughly 100,000 more tax payers paid the tax on self assessment basis than the preceding year. Further, given the emphasis was on restoring the equity and revenue buoyancy rather than on immediate gain of revenue, these reductions are understandable. So the success of the UAM seems to be one of widening the tax net rather than increasing the revenue per se.

During 2005-06 MCD could collect Rs.794.43 crores in spite of strenuous efforts for recovery of property taxes. Out of the collection of Rs. 794.43 during the year, a sum of Rs. 486.43 was towards property taxes and the remaining amount of Rs. 307 crores towards transfer duty. During the year, 824,873 tax payers paid property tax through self assessment returns. In the current financial year 2006-07, MCD collected Rs. 358.19 crores of property tax.

Having said this and described the UAM, for calculating the base of property tax, ideally, we should have data on the assessed value of property to obtain some idea of the local government’s revenue raising capacity. For this, at the minimum, we would need information on the number of properties and size of the typical property by category. We would need information

on the number of assesses and information on the demand for property tax. However, based on our discussions with the MCD, these data were being compiled for a few zones of the MCD at best. It was not available for all zones of the MCD at the time we completed the study. Given we had no other recourse, we used data on Delhi's state domestic product to arrive at estimates of its revenue capacity (explained in detail in the last chapter). This is consistent with the conceptual framework that has been developed earlier.

## **Expenditure**

The MCD emphasizes in keeping records of revenue expenditure. While the MCD had started to maintain data on capita expenditures and these were being compiled at the time of our study, they were not ready for use. Hence we examine MCD's revenue expenditures on all important public services.

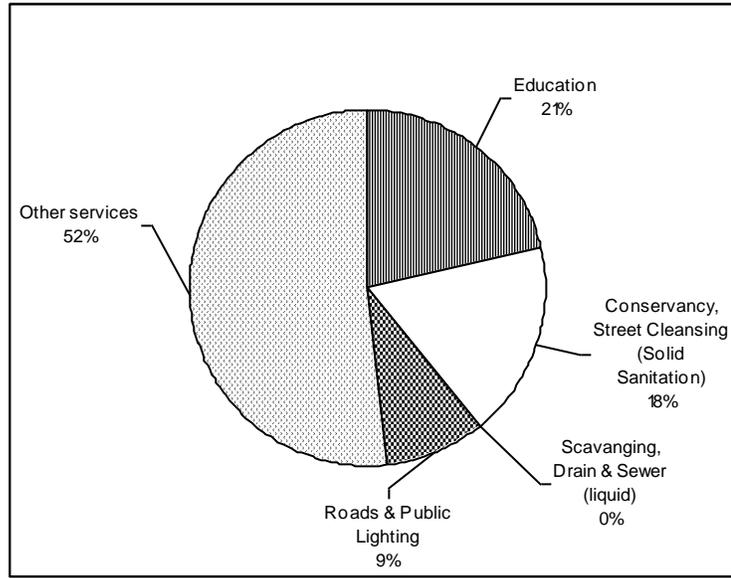
Figure 2.4 summarizes the per capita expenditures on the services provided by MCD. Figure 2.4 shows that most of MCD's revenue expenditures in 2004-05 was on 'other services,'<sup>5</sup> education, and sanitation, in that order (52 percent, 21 percent and 18 percent, respectively). The other important areas in terms of incurring revenue expenditure are roads and public lighting. Expenditure on a basic service such as scavenging, drains and sewers accounted only for 0.20 percent of MCD's expenditure in 2004-05 in real (1999-00) terms.

As we have emphasized elsewhere (NIPFP (2007)), expenditure is what we observe and it is desirable to disaggregate costs, efficiencies and preferences. Given the data constraints, and the fact that we could not perform more rigorous econometric work by examining the effect of each of these factors on expenditure need, we made an attempt to gather information on the total number of employees in the MCD by department/service, with a view to examining the expenditure efficiency of the MCD in providing various services. Table 2.4 summarizes MCD's employee strength by department in 2004-05. Out of 143,304 employees, 78,801 (i.e. 55 percent) are engaged in sanitation services, and 28,879 (i.e. 20.15 percent) are engaged in education services. Clearly sanitation is the largest, which requires a large number of unskilled workers. Here privatization and outsourcing can make the provision of the service more efficient. The MCD has been taking some steps toward these measures.

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<sup>5</sup> Other services refer to expenditures on general supervision, collection of revenue, public health, medical relief, garden and open spaces, reserve for unforeseen charges, libraries, building, land acquisition & management, fire brigade, licensing, removal of encroachments, markets & slaughter house, development charges, miscellaneous services including petty new work & departmental charges (specific need).

**Figure 2.4: Components of MCD's (Deflated) Revenue Expenditure, 2004-05**



Source: MCD and Authors' Computations.

However, given that we did not have time-series data on employees by service, it was not possible to determine whether employees or their salaries are the real drag on MCD's efficiency in the provision of the respective services.

**Table 2.4: Labor Strength in Various MCD Departments, 2004-05**

Department	Total Number of Employees	Percentage in Various Departments
Property tax	465	0.32%
Sanitation	78801	54.99%
Education	28879	20.15%
Engineering	12723	8.88%
Health	12118	8.46%
Horticulture	7679	5.36%
Veterinary Service	448	0.31%
Community Service	837	0.58%
Town Planning	101	0.07%
Others	1253	0.87%
Total	143,304	100.00%

Source: Municipal Corporation of Delhi and authors' computation.

## Physical Level of Services

In our analysis, we made an attempt to examine the physical level of services on which the MCD apparently seems to spend a substantial portion of its funds. Education and roads are some of these areas. Hence we obtained available data from MCD's Department of Education.

Table 2.5 summarizes some relevant time-series data (from 2000-01 to 2006-07) for MCD's schools. From Table 2.5 we can see that there are more than 1,800 primary schools in the MCD area, and on an average, in any given year, 884,857 students are enrolled. It may be seen from the table that during 2000-01 to 2006-07 some schools were closed and some new schools established.<sup>6</sup> The numbers of enrolled students are increasing. More than 90% of those enrolled in the MCD schools completed their primary studies, though this rate was decreasing from 2000-01 (95.88%) to 2003-04 (90.98%) and then increasing to 91.94%. The number of schools per thousand population was 0.158 in 2000-01, but decreased to 0.115 in 2006-07. So population is still increasing at a high rate than the increase in number of schools.

**Table 2.5: Education Outcomes, MCD Schools, 2001-02 to 2006-07**

	Number of Schools	No. of Schools Open	No. of schools closed	Student Enrolment	Completion Rate	Drop-out Rate
Average	1827.71	17	15.83	884857.86	0.93	0.07
Maximum	1853	44	39	905136	0.96	0.09
Minimum	1814	0	6	847087	0.91	0.04
Standard Deviation	15.80	16.13	11.79	18367.25	0.02	0.02
Number of observations	7	7	6	7	7	7

*Source:* MCD Department of Education, and Authors' Calculations.

## Roads

This is another area for which we were able to gather information on the physical level of services from Delhi's Statistical Handbook, 2006.

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<sup>6</sup> Based on our discussion with MCD education officials, if in a particular area, the number of students in a school becomes less than 100 then it would be closed, given other schools are likely to be situated nearby. Alternatively, if it were to be the case that actual enrollment is higher than the capacity of any school, then new schools are established.

**Table 2.6: Type of Vehicles, Delhi, 2004-05**

Type of Vehicle	Number
Cars & Jeeps	1,431,638
Motorcycles/Scooters	2,844,004
Auto rickshaw	53,656
Taxis	13,511
Buses	24,235
Good Vehicles	140,982
Total	4,508,026

*Source:* Delhi Statistical Handbook, 2006

According to latest data available for 2004-05 MCD had 27,139 kilometers of municipal roads, NDMC, 1,550 kilometers and Delhi Cantonment Area 144 kilometers of roads within their respective jurisdictions. Apart from these, the agglomeration of Delhi has roads maintained by Public Works Department. Table 2.6 summarizes the number of registered vehicles in the Delhi UA, a total of 4,508,026 vehicles are registered according to the latest Figures available for 2004-05 of which motorcycles/scooters account for the highest proportion (63%). Given that there were 2,548,359 households in Delhi (all local governments) as of the 2001 Census, these data imply more than one vehicle per household, and call for efficient road management to reduce commuting time.

In our final analysis, we calculated revenue capacities, expenditure needs and fiscal gaps in per capita terms. In order to compute per capita real expenditure on important public services and per capita revenues, based on the 1991 and 2001 census population for MCD, we projected the non-census years' population under the jurisdiction of MCD using the exponential growth rate, of MCD's population over 1991-2001, i.e., 5.21 percent. It was assumed that this exponential growth rate was constant over the years till 2004-05. Projecting the population this way, we ensured for the census years (1991 & 2001) was the same as the actual populations reported by the census for these years. This way we were guaranteed that our population estimates for the non-census years were indeed plausible.

The next chapter summarizes our discussion of findings regarding MCD's water supply.

## **CHAPTER 3**

### **MCD: WATER SUPPLY**

In Delhi, the Delhi Jal Board (DJB) is the primary supplier of water to the MCD area. The NDMC and DCB buy water in bulk from the DJB and distribute to their areas. Thus we note that the expenditure responsibility of the MCD does not include provision of water supply. Delhi Jal Board was constituted through an Act of Delhi Legislative Assembly on 6th April 1998. This Act provided for the establishment of a board to discharge the functions of water supply, sewerage and sewage disposal and drainage within the National Capital Territory of Delhi and for related matters. DJB has been meeting the needs of potable water and sewerage for the residents of Delhi for more than five decades. In this chapter, we present the finances of the DJB and analyze available physical data pertaining to water supply and sewerage.

#### **DJB Finances**

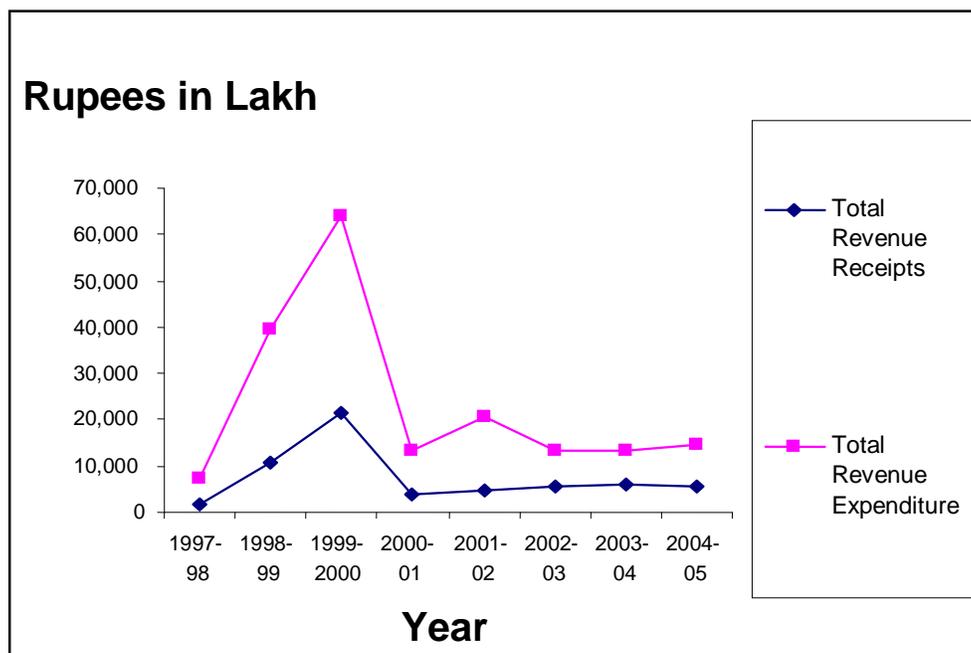
Table 3.1 represents financial performance of DJB and summarizes revenues and expenditure on water supply in the MCD area. We see that total revenue receipts (in 1999-2000 constant prices) from water and drainage was Rs. 1,741.64 lakhs in the year 1997-98, and it has been constantly been increasing in real terms to Rs. 5,612.97 lakhs in 2004-05. It may be readily reckoned that revenue receipts have covered more than 20 percent of revenue expenditure on the service, but this recovery has been slowly increasing over time, to 39 percent in 2004-05. Figure 3.1 reinforces this.

**Table 3.1: Finances of Delhi Jal Board (in 1999-2000 Constant Prices)**

<b>Financial Component (Rupees in Lakh)</b>	<b>1997-98</b>	<b>1998-99</b>	<b>1999-2000</b>	<b>2000-01</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>	<b>2004-05</b>
<b>Revenue Receipts</b>								
Water	1,508.98	9,306.76	20,470.00	3,464.64	4,231.71	4,703.28	5,629.25	5,025.99
Drainage	232.66	1,471.70	1,157.00	214.42	699.63	700.49	538.29	586.98
<b>Total Revenue Receipts</b>	<b>1,741.64</b>	<b>10,778.46</b>	<b>21,627.00</b>	<b>3,679.06</b>	<b>4,931.34</b>	<b>5,403.77</b>	<b>6,167.55</b>	<b>5,612.97</b>
<b>Revenue Expenditure</b>								
Establishment	1,490.78	8,626.75	11,280.00	2,586.32	3,725.77	4,159.18	5,183.78	5,877.20
Electricity (DVB)	1,451.69	7,870.63	16,066.00	2,403.65	5,128.73	6,347.99	5,721.05	4,840.05
Raw Water	48.27	147.24	248	101.57	131.21	172.78	584.96	339.3
Property Tax	146.56	711.31	746	1,292.13	1,051.99	1,776.28	694.35	724.28
Debt Charges	3,877.71	20,108.69	32,290.00	6,097.05	9,476.89	0	0	0
Other	396.32	2,057.82	3,417.00	639.15	1,041.84	849.86	957.76	2,671.66
<b>Total Revenue Expenditure</b>	<b>7,411.32</b>	<b>39,522.44</b>	<b>64,047.00</b>	<b>13,119.88</b>	<b>20,556.44</b>	<b>13,306.09</b>	<b>13,141.89</b>	<b>14,452.48</b>
Non Plan Deficit (Revenue Expenditure - Revenue Receipts)	5,669.68	28,743.98	42,420.00	9,440.83	15,625.10	7,902.32	6,974.35	8,839.51
Net Non Plan Deficit (excluding Debt Charges)	1,791.97	8,635.29	10,130.00	3,343.78	6,148.21	7,902.32	6,974.35	8,839.51
Non Plan loan released of which:	316.55	0	0	1,280.36	8,808.62	14,296.43	14,050.18	17,971.15
(i) Non Plan Loan	0	0	0	0	4,381.36	7,991.52	5,890.37	8,642.94
(ii) Conversion of interest into non- plan loan	0	0	0	0	4,427.25	6,304.91	8,159.82	9,328.20

*Source:* Economic Survey of Delhi and Authors' Computations.

**Figure 3.1: Revenues and Expenditures, Delhi Jal Board (in 1999-00 Prices)**



Sources: Delhi Jal Board's Revised Estimates & Budget Estimate for 2005-06

The main cause of these fluctuations of revenue receipts and expenditures we observe in Figure 3.1, is due to changes in the price index for water, gas and electricity.<sup>7</sup> When we observe the per capita revenue receipts from water (in 1999-00 prices) we get a similar picture, so that it was increasing from Rs. 67.41 to 524.27 from 1997-98 to 1999-2000 and then it reduced to Rs. 101.88 in 2000-01, and to Rs. 90.90 in 2004-05. For the revenue expenditure we see a similar picture due to the price index with which the water supply, gas and electricity sector is faced.

Table 3.2 summarizes the per capita finances of the DJB in real terms. It further reinforces that per capita revenue receipts have been fluctuating (primarily due to the price index), but overall has increased over the period 1997-98 to 2004-05. Appendix 3A.1 describes the water supply tariffs charged by the DJB which does consist of a volumetric consumption regime, with metered connections in place. We discuss the adequacy of the spending on the services in the chapter on expenditure needs and fiscal gaps.

<sup>7</sup> In nominal terms, the fluctuations are quite gradual. In 1997-98, total revenue receipts were Rs.11,004 lakhs, in 1998-99, they increased to 15,153 lakhs, 21,627 lakhs in 1999-00, and Rs. 21,551 lakhs in 2000-01.

**Table 3.2: Per Capita Finances, Delhi Jal Board (In 1999-2000 Constant Prices)**

Financial Components (In Rupees)	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05
<b>Revenue Receipts</b>								
Water	13.73	80.31	167.56	26.90	31.17	32.87	37.32	31.61
Drainage	2.12	12.70	9.47	1.67	5.15	4.90	3.57	3.69
<b>Total per capita Revenue Receipts</b>	<b>15.84</b>	<b>93.00</b>	<b>177.03</b>	<b>28.57</b>	<b>36.33</b>	<b>37.77</b>	<b>40.89</b>	<b>35.30</b>
<b>Revenue Expenditure</b>								
Establishment	13.56	74.44	92.34	20.08	27.45	29.07	34.37	36.96
Electricity (DVB)	13.20	67.91	131.51	18.67	37.78	44.36	37.93	30.44
Raw Water	0.44	1.27	2.03	0.79	0.97	1.21	3.88	2.13
Property Tax	1.33	6.14	6.11	10.03	7.75	12.41	4.60	4.56
Debt Charges	35.27	173.51	264.32	47.35	69.81			
Other	3.60	17.76	27.97	4.96	7.68	5.94	6.35	16.80
<b>Total per capita Revenue Expenditure</b>	<b>67.41</b>	<b>341.03</b>	<b>524.27</b>	<b>101.88</b>	<b>151.44</b>	<b>92.99</b>	<b>87.13</b>	<b>90.90</b>
Non Plan Deficit (Revenue Expenditure - Revenue Receipts)	51.57	248.02	347.24	73.31	115.11	55.23	46.24	55.60
Net Non Plan Deficit (excluding Debt Charges)	16.30	74.51	82.92	25.97	45.29	55.23	46.24	55.60
Non Plan loan released of which:	2.88	NA	NA	9.94	64.89	99.91	93.15	113.03
(i) Non Plan Loan	NA	NA	NA	NA	32.28	55.85	39.05	54.36
(ii) Conversion of interest into non-plan loan	NA	NA	NA	NA	32.61	44.06	54.10	58.67

*Source:* Economic Survey of Delhi, and Authors' Computations.

**Table 3.3: Delhi Jal Board, Plan Outlay**

Year	Outlay/Expenditure	Amount
2002-03	Approved Outlay	13,833.57
	Revised Outlay	14,795.34
	Expenditure	14,771.93
2003-04	Approved Outlay	16,574.62
	Revised Outlay	15,758.64
	Expenditure	15,725.49
2004-05	Approved Outlay	17,610.61
	Revised Outlay	17,211.80
	Expenditure	17,156.24

*Source:* Economic Survey of Delhi

Table 3.3 summarizes the plan expenditure of DJB. We have confirmed that these plan expenditures are indeed spent completely on DJB's capital expenditure. In real terms (1999-2000 constant prices), outlays (both initially approved and then revised), and actual plan (capital) expenditures for DJB are continually increasing.

### **Water Supply: Physical Information**

We were successful in obtaining some information on the physical level of services for water supply from the Delhi Jal Board and the Delhi Statistical Handbook. Table 3.4 summarizes some information from the Delhi Jal Board. While the extent of leakages amount to 40 percent of total supply, there was no information available on the extent of the city's population or land area covered by DJB's networks. Further, the duration of water supply is not continuous, but intermittent.

**Table 3.4: Physical Information, Water Supply, MCD**

<b>Physical Measure</b>	<b>2004</b>	<b>2005</b>
Duration of supply (per day)	2-4 hrs.	2-4 hrs.
Flow of supply (Intermittent/continuous?)	Intermittent	Intermittent
% of losses due to leakages and thefts	40%	40%
Demand (in litres) per day	NA	NA
% of city's households/population covered with water connections	NA	NA
% of city's land area covered with water connections	NA	NA

*Source:* Delhi Jal Board.

Table 3.5 summarizes other relevant physical data on water supply for the MCD area. It shows the number of metered as well as unmetered connections in Delhi continuously rising, emphasizing the need for augmenting supply. Based on our discussions with the Delhi Jal Board, among the connections in 2005-06 (i.e., 1,598,907), 1,479,211 i.e., 92.5% were domestic connections; 95,214 (6 percent) were commercial and institutional connections and 24,482 i.e., 1.5% represented industrial connections.

Table 3.5 shows that the per capita consumption of water has been dwindling. Data in Table 3.5 show that on average, the consumption of water supply is 170 liters per capita daily (based on the time series data in Table 3.5). But there are also leakages and theft, according to the DJB, to the extent of nearly 40 percent (Table 3.4). So it is possible that the actual consumption of water is only about 102 liters per capita daily, which is below the norm of 135 LPCD

recommended by the National Commission on Urbanization. There are also seasonal variations in supply which these annual data do not capture.

**Table 3.5: Physical Information, Water Supply, Delhi**

Year	Metered Connections	Unmetered Connections	Per Capita Consumption of Water (litres per day)
1999-00	997,057	300,102	193.04
2000-01	1,034,724	312,000	189.25
2001-02	1,102,326	313,112	151.40
2002-03	1,139,373	322,460	149.51
2003-04	1,173,693	329,278	147.62
2004-05	1,216,542	335,052	182.44
2005-06	1,256,040	342,867	179.79

Source: Delhi Statistical Handbook, 2006.

## Sewerage and Drainage

Table 3.6 presents some summary physical data of projected sewage flows for Delhi as a whole, based on data from the Economic Survey of Delhi. It shows that the total net water supply is projected to fall short of demand until 2021. Further, even as of 2004, the proportion of water that is not sewered amounted to roughly 14 percent of the total volume of wastewater.

**Table 3.6: PROJECTED SEWAGE FLOWS, Delhi**

Sources of wastewater	Volume (in million litres daily)				
	2004	2005	2006	2011	2021
Total water demand	2685	3763	4090	5181	6272
Total net water supply	2265	2362	2461	3573	5259
Wastewater generated	1812	3010	3272	4144	5017
Gross wastewater to treatment	1876	2240	2316	2736	3760
Proportion not sewered	14%	13%	13%	10%	5%
Outside sewered area	254	302	302	294	210
Net generated wastewater	1358	1722	1798	2218	3242

Source: Economic Survey of Delhi, 2005-06

**Table 3.7: Physical Data on Sewerage and Drainage**

Year	Total length of underground drains	Total length of Storm water drainage Sewers	% of population covered by drainage and storm water drainage system
2004	6,000 kms	6,000 kms	45%
2005	6,217 kms	6,000 kms	NA

Source: DJB

Table 3.7 summarizes DJB's response to our questionnaire relating to sewerage. From this, we get to know that total length of underground drains was 6,000 kilometres in 2003-04, and was increased by only 217 more kilometres in 2004-05. Only 45 percent of the total population of Delhi was covered by drainage and storm water drainage system even as of 2003-04.

These physical data on water supply, sewerage and drainage demonstrate that the level of services leaves much to be desired, when compared with not only the norms, but also for an educated and high income state like Delhi. We have more to say on the norms in Chapter 5, when we assess the fiscal health of the MCD.

The next chapter provides an overview of NDMC and DCB finances and services.

## Appendix 3A.1 Water Supply Tariffs in Delhi Jal Board

Water tariff charged by the DJB is in two parts. It consists of fixed access charge and water use charges. Fixed access charges are payable by all registered consumers to meet the cost of access to the network, operation and maintenance.

### Fixed Access Charges

Under fixed access charges there are three types of categories.

Category	Nature of Premises	Charges per month (M)
C-I	I. JJ/ Resettlement colonies, Rural areas, Low Income Group (LIG) Flats/ Janta Flats, one room Tenements for Type –I Govt. Quarter, One room Tenements / Religious places / Dharamshalas / Cremation grounds / Orphanages / homes for destitutes / Piaos/ Institutes for Physically handicapped / Mentally Retarded.	Rs. 40/-
	II. Type II Government quarters, Middle Income Group (MIG) housing, houses / premises having area upto 50 Sq. Mtr.	Rs. 50/-
	III. Other residential houses having area above 50 Sq.Mtr. & upto 100 Sq.Mtr. including High Income Group (HIG), Hostels of Educational Institutes / Attached Hostels / Working Women's Hostels	Rs. 75/-
	IV. Plots above 100 sq. mt. and up to 150 sq. mtr.	Rs. 100/-
	V. Plots above 150 sq. mtr., Luxury bungalows, apartments	Rs. 150/-
C-II	Non-Domestic Premises	Rs. 250/-
C-III	Non-Domestic Premises	Rs. 600/-

*Source:* Delhi Jal Board.

- Fixed access charges in respect of religious places, *dharamshalas*, cremation grounds, destitute homes, orphanages, institutes for physically/mentally handicapped is fixed at Rs.40/- per month per connection, irrespective of the plot area.
- Fixed access charges for hostels of educational institutes, working women's hostels and hostels attached with educational institutions having separate water connection is fixed at Rs.75/- per month per connection, irrespective of the plot area.
- Fixed access charges in respect of plots/house having area up to 50 square meters and area above 50 square meters to 100 square meters, is Rs. 50/- and 75/- respectively, per month, per connection.

## Volumetric Water Charges

Category I		Category II		Category III	
Consumption (per month)	Rs. (B) per KL.	Consumption (per month)	Rs. (B) per KL.	Consumption (per month)	Rs. (B) per KL.
<b>Upto 6 Kilolitres (KL)</b>	0	Upto 25 KL	10.00	Upto 25 KL	15.00
<b>Above 6 KL and upto 20 KL</b>	2.00	Above 25 KL and upto 50 KL	20.00	Above 25 KL and upto 50 KL.	25.00
<b>Above 20 KL and upto 40 KL</b>	5.00	Above 50 KL	30.00	Above 50 KL and upto 100 KL	35.00
<b>Above 40 KL</b>	10.00			Above 100 KL.	50.00

*Source:* Delhi Jal Board.

Domestic connections fall under **category I**. It is for residential, hostels, destitute homes, homes for physically and mentally challenged, religious premises, dharmshalas, cremation ground etc.

Non domestic connections are fall under **category II & III**.

**Category II** is for shops, non-AC Restaurants, dhabas, office premises, dhobi- ghats, household industry requiring water only for drinking purpose, Government/MCD schools/educational institutions, public urinals and latrines, cattle troughs, vegetable / milk booths, Government institutions, professional training institutions, jails, creches, libraries, reading rooms, dairies, dry cleaners, offices of PSUS, Govt. undertakings, local bodies, banks, government hospitals and Govt. dispensaries, health care centers without in patient facilities like clinics, animal husbandry unit, playgrounds, zoo, any unit / concern offering professional services, non AC-guest houses maintained by government or public sector undertaking or corporate bodies but not run for commercial purposes.

**Category III** is for hotels with lodging and boarding facilities, any industrial unit run in factory area / industrial area, guest houses, AC restaurants, banquet halls, cinema halls, private hospitals, AC/ non-AC nursing homes, factories, ice factories, ice-cream factories, aerated water factories, mother dairy milk plants, cooling plants, cold storage, horticulture activities, hot mix-plants, swimming pools excluding of education institutions, private educational institutions, petrol pumps with or without service stations, petroleum depots, laundries, printing press, bakeries, flour mills, theatres, circus, motor garage / workshop, power generation plants, gas oil installations, photo labs, manufacturing works of RCC/PCC/marble/mosaic tiles, marble and stone-cutting shops, warehouse/ go-downs, recreational/sports clubs/golf clubs/race course, AC and non-AC nursing homes, AC / non-AC beauty treatment parlours / clinics and AC/non-AC massage parlours / centres, all types of industries excluding household industries mentioned under Category-II railway stations/ yard/ workshop, exhibition grounds, ISBT / DTC Depot, fountains for ornamental use of water, poultry / agricultural/horticultural farms and allied agro based activities, Delhi Vidut Board's Sub-Stations, Sweetmeat Factory, Stadium.

There will be an annual increase @10% on fixed access charges on the tariff only, at the beginning of each financial year, with effect from 1-4-2006 and onwards. This is consistent with that specified by

national urban reform initiatives such as the Jawaharlal Nehru National Urban Renewal Mission (JNNURM).

The method for calculation of bulk water supply charges payable by NDMC and the DCB's Military Engineering Services (MES) is to be done in accordance with the provision of Section 37 of Delhi Water Board Act 1998. According to this, NDMC and MES will have to pay the actual cost of water supplied to them, on rational basis by assessment of total expenditure to include the cost of depreciation and interest payable. Thus the total expenditure would then be divided by the total number of KL supplied to the entire Delhi and then multiplied by the amount supplied to the respective agencies.

DJB will also introduce a new scheme for new water connection towards composite services for plumbing services in lying pipe line etc at the door-step of the consumer at the following rates:-

**Water Connection charges:**

<b>Category</b>	<b>Charges per connection (in Rs.)</b>
I	2500
II	4000
III	6000

*Source:* Delhi Jal Board.

## CHAPTER 4

### NDMC AND DCB: FINANCES AND SERVICES

As described in the earlier chapters, NDMC and the Delhi Cantonment Board (DCB) account for less than 5 percent of Delhi's population or land area. While we were able to get time-series data for the MCD on their revenues and expenditures by service, for the NDMC and DCB, we were successful in getting data only for a couple of recent years. Because of this, we faced another problem in summarizing NDMC data in real terms. We had data on the price index for Delhi from 1994-95 all the way to 2004-05. The financial data from the MCD overlapped with this time period to enable us to deflate them to real terms. However, for the NDMC, we had data only for the period 2004-05 to 2006-07. Thus the only overlapping year for NDMC as far as the financial data and price index was concerned, was 2004-05. Hence as far as revenue capacities, expenditure needs and fiscal gaps are concerned, we were able to use only data for 2004-05 in real terms for the NDMC. Because of this, we summarize most of the NDMC financial information we have in terms of proportions (based on nominal terms).

#### NDMC Revenues

Table 4.1 summarizes NDMC revenues and their sources.

**Table 4.1: Summary of NDMC Revenues**

	2004-05 (Actual)			2005-06 (Revised Estimates)			2006-07 ( Budget Estimates)		
	Percentage of Total Revenue Receipts	Percentage of Total Capital Receipts	Percentage of Total Receipts	Percentage of Total Revenue Receipts	Percentage of Total Capital Receipts	Percentage of Total Receipts	Percentage of Total Revenue Receipts	Percentage of Total Capital Receipts	Percentage of Total Receipts
Total Tax Revenue	16.29%	0.00%	15.97%	15.53%	0.00%	15.29%	16.17%	0.00%	15.87%
Total Non Tax Receipts	80.49%	49.82%	79.88%	82.12%	27.63%	81.27%	81.38%	25.51%	80.37%
Grants	3.22%	50.18%	4.15%	2.34%	72.37%	3.45%	2.46%	74.49%	3.75%

Source: NDMC

The sources of tax revenue are house tax from government and private buildings, advertisement taxes, assigned share of taxes, theatre and show tax, duty on transfer property and

other taxes. The sources of non tax revenues are building related receipts, interest on investment & advances, administrative department receipts, supply of electricity, water supply, roads, other municipal works, advances to employees, and other fees.<sup>8</sup>

NDMC gets almost 50 percent of its total revenue from sale and supply of electricity. Interest on investment & advances, and tax receipts are other two important sources of revenue. Grants are major sources of capital receipts.

### Electricity supply

The major source of total revenues of NDMC is electricity supply (52 percent of total nominal revenue, Table 4.2). Most of which comes from the sale of energy and meter rent. In the year 2004-05 total revenue receipts from the sale of energy was Rs.533,98,82,000 (in nominal terms) and from meter rent it was Rs.1,21,80,000. The budget estimates of 2006-07 indicate that 540 crore rupees is going to come from the sale of energy in NDMC area.

**Table 4.2: Revenues from Sale of Electricity**

Based on Current prices	2004-05 (Actual)			2005-06 (Revised Estimates)			2006-07 ( Budget Estimates)		
	Percentage of Total Revenue Receipts	Percentage of Total Capital Receipts	Percentage of Total Receipts	Percentage of Total Revenue Receipts	Percentage of Total Capital Receipts	Percentage of Total Receipts	Percentage of Total Revenue Receipts	Percentage of Total Capital Receipts	Percentage of Total Receipts
Electricity	50.808%	0.000%	49.801%	51.942%	0.000%	51.123%	52.016%	0.000%	51.078%

Source: NDMC

However, in measuring the revenue raising capacity of the NDMC we should no longer consider the huge revenue from electricity as it is going to be privatised in the coming years.

<sup>8</sup> This category includes fines, plumbing license, hawking license, dhobi license, stable cow house licence, dangerous & offensive trade- licence, shop licence, copying fee & sale of byelaw, composition fee, sewer connection fee, registration of architects, compounding fee, funeral van charges, plan preparation fee, inspection fee, sewer blockage & sewer inspection fee & revalidation fee, deposit works (horticulture, civil engineering department, electrical departments), social works (which includes education, medical, public health, animal husbandry, swimming pool, cattle pond, housing, indoor stadium, *barat ghars*, sewing centres & crèches, and parking fees).

## **Interest**

The second major source of total revenues (at least in nominal terms) is interest earning on investment and interest on advances (in total they earn 18 percent of total revenue). In 2004-05 the NDMC revenue receipts from interest on investment was Rs.178,73,59,000 and it is estimated in the 2006-07 budget to be Rs.158,59,00,000 (in nominal terms). Table 4.3 summarizes NDMC's revenues from other services.

## **Taxes and Duties**

Apart from electricity, the next major source of revenue for the NDMC is taxes and duties. Most of the revenue from tax is from the house tax or the property tax.

### ***Property tax***

The house tax department is one of the major revenue-earning departments of NDMC. The revenue is realised from -

1. Property tax from 12,136 private properties and government properties constructed prior to 26<sup>th</sup> January, 1950 and
2. Service charges from the government properties constructed after 26-01-1950.

In 2004-05 the total revenue receipts from government buildings was Rs.17,27,81,000 and from private properties total tax collection was Rs.130,31,94,000 (on average tax per private property being Rs.107,382). The 2006-07 budget estimates indicate that the total house tax revenue is likely to be Rs.140 crore of which tax on government building contributes Rs. 15 crore and remaining Rs. 125 crore will come from tax on private properties.

**Table 4.3: NDMC Revenues from Other Services**

	2004-05 (Actuals)			2005-06 (Revised Estimates)			2006-07 ( Budget Estimates)		
	Percentage of Total Non tax Revenue Receipts	Percentage of Total Non tax Capital Receipts	Percentage of Total Receipts	Percentage of Total Non tax Revenue Receipts	Percentage of Total Non tax Capital Receipts	Percentage of Total Non tax Receipts	Percentage of Total Non tax Revenue Receipts	Percentage of Total Non tax Capital Receipts	Percentage of Total Non tax Receipts
Building Related Receipts	0.24%	0.00%	0.23%	0.13%	0.00%	0.13%	0.13%	0.00%	0.13%
Other Fees**	0.26%	0.00%	0.26%	0.26%	0.00%	0.26%	0.18%	0.00%	0.18%
Interest on Investment & Advances	21.02%	0.00%	20.76%	18.68%	0.00%	18.58%	18.69%	0.00%	18.58%
Administrative Deptt. Receipts	0.15%	0.00%	0.15%	0.08%	0.00%	0.08%	0.10%	0.00%	0.10%
<b>Social Services***</b> [May be considered as User Charges]	0.49%	0.00%	0.48%	0.47%	0.00%	0.47%	0.49%	0.00%	0.49%
Electricity	63.13%	0.00%	62.34%	63.25%	0.00%	62.91%	63.92%	0.00%	63.55%
Water Supply	1.70%	0.00%	1.68%	1.75%	0.00%	1.74%	1.78%	0.00%	1.77%
Roads	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other Municipal Works	12.89%	0.00%	12.73%	15.22%	0.00%	15.14%	14.55%	0.00%	14.46%
Advances to Employees	0.13%	0.00%	0.12%	0.15%	0.00%	0.15%	0.16%	0.00%	0.16%
Deposit Works (Horticulture, Civil Engg. Deptt., Electrical Deptt.)	0.00%	100.00%	1.24%	0.00%	100.00%	0.54%	0.00%	100.00%	0.57%

Source: NDMC

### **Tax base**

Table 4.4 summarizes tax revenues of the NDMC by source. Tax base is the total market value, in the NDMC, of the asset (value of goods, services or property) that is subject to tax. In the NDMC area, property tax is a percentage of the rateable value of lands and buildings.

The rateable value (reference section 61, the NDMC Act, 1994) of any land or buildings assessable to any property tax is the annual rent at which such land or building might reasonably be expected to let from year to year less a sum equal to 10 percent of the said annual rent which shall be in lieu of all allowances for cost of repairs and insurance and other expenses, if any, necessary to maintain the land or building in a state to command that rent.

**Table 4.4: Components of Tax Revenues, NDMC**

	<b>2004-05 (Actual)</b>	<b>2005-06 (Revised Estimates)</b>	<b>2006-07 ( Budget Estimates)</b>
	<b>Percentage of Total tax Revenue Receipts</b>	<b>Percentage of Total tax Revenue Receipts</b>	<b>Percentage of Total tax Revenue Receipts</b>
House Tax (Govt. Buildings)	10.028%	7.923%	8.888%
House Tax (Private)	75.635%	76.056%	74.065%
Assigned Share of Taxes	6.550%	8.035%	8.130%
Advertisement Tax	0.057%	0.032%	0.000%
Theatre & Show Tax	0.004%	0.000%	0.000%
Duty on Transfer of Property	7.706%	7.923%	8.888%
Other Taxes	0.019%	0.032%	0.030%

Source: NDMC

Provided that in respect of any land or building the standard rent of which has been fixed under the Delhi Rent Control Act, 1958, the rateable value thereof shall not exceed the annual amount of the standard rent so fixed. With rent control in place, it is easy to imagine that revenues raised through this method would be constrained. There was also no data available on the assessed value of properties in the NDMC, as with the MCD. Hence, for arriving at estimates of revenue capacity for the NDMC (for a single year), we relied on estimates of state domestic product, as we did for the MCD.

### **Rate of house tax**

The council sets the tax bases and corresponding tax rates of property for a year. This may or may not continue in the next year depending on the decision of the council. The tax rates for 2005-06 are given below:

- 20 percent where rateable value does not exceed Rs.10 lakhs.
- Rs.20,000 plus 25 percent of the amount by which the rateable value exceeds Rs.10 lakhs.
- Rs.4,50,000 plus 30 percent of the amount by which the rateable value exceeds Rs. 20 lakhs.

### ***Duty on transfer of property***

The total revenue receipts from duty on transfer of property in 2004-05 was Rs.13,27,69,000 and it is estimated as Rs. 15 crore in 2006-07 budget estimates (in nominal terms). Table 4.5 summarizes the proportion duties on transfer of property form of total tax revenues and total revenues. Obviously this is important as a tax revenue source.

**Table 4.5: NDMC Revenues from Duty on Transfer of Property**

	<b>2004-05 (Actual)</b>	<b>2005-06 (Revised Estimates)</b>	<b>2006-07 ( Budget Estimates)</b>
Percentage of Total tax Revenue Receipts	7.706%	7.923%	8.888%
Percentage of Total Revenue Receipts	1.255%	1.231%	1.437%

*Source:* NDMC

### **Revenues from Water Supply and Other Service Charges**

Only two percent of NDMC's total revenue comes from water supply which has two components revenue from sale of water (99% of total revenue from water supply) and meter rent. In 2006-07 budget estimates the indication is that there will be no collection of education fee. Only revenue from bus fee for senior secondary and primary schools are estimated as Rs. 3 lakh. There is no user charges collected individually on solid waste collection, sanitation, streetlights and municipal roads. Revenue is collected only for car parking (see footnote 1).

### **External Assistance**

Only 3 percent of NDMC's total revenues are from external assistance (Table 4.1). The grants are both of plan (for capital expenses) and non-plan (i.e., meant for O&M). Table 4.6 summarizes the external assistance for NDMC.

**Table 4.6: Summary of External Assistance, NDMC**

External assistance component	2006-07 Budget estimates (in Rs.) (in current prices)	
	Revenue	Capital
<b>i. Assistance for non-plan scheme</b>	22,97,11,000	0
a.Grants-in-aid	22,97,11,000	0
b.Loans for non-plan schemes	0	0
<b>ii. Assistance for plan schemes</b>	2,67,00,000	9,93,00,000
a. Grants-in-aid	2,67,00,000	9,93,00,000
b. Loans for plan schemes	0	0
<b>iii. Grants for M.L.A's Constituency Fund(Plan)</b>	0	4,35,00,000
Total external assistance	25,64,11,000	14,28,00,000

Source: NDMC

Grants in aid for non plan schemes comprise of

1. Devolution of funds in terms of DFC (Delhi Finance Commission) formula
2. Grants in aid for electricity and water consumption at *dhobi ghats* in NDMC area. These grants are specific purpose in nature.

On the other hand, grants in aid for plan schemes comprise of

1. Education (As per 2006-07 budget estimates, a. Revenue receipts = Rs. 67,00,000 , b. Capital receipts =Rs.1, 33, 00,000)
2. Technical education
3. Sports and youth services
4. Mid-day meals scheme
5. Health
6. Anti Flood
7. Urban development
8. Animal husbandry
9. Roads and bridges
10. Social welfare
11. Labour and labour welfare
12. Agriculture and allied services
13. Forest (tree plantation)
14. Welfare of SC/ST/OBC and others

We did not, however, have information on whether these grants for specific purposes were actually spent on the respective sectors, or were used for other purposes by the NDMC. Thus while we may be reasonably sure that these specific purpose grants may have encouraged minimum amount of spending by the NDMC on the respective areas for which they were meant, we have no evidence of how much more was actually spent on each of these areas than before, to conclude with any positive assessment of the grants.

### **NDMC Expenditure**

Quite symmetric with its sources of revenue, NDMC spends a majority of its nominal expenditure (38 percent) on electricity supply and this proportion was increasing. Table 4.7 summarizes NDMC's plan as well as non-plan expenditure on various heads, in terms of proportions. Clearly, expenditure on supply of electricity is the largest and has been increasing over time, at least in nominal terms, increasing to 40.61 percent in 2006-07. NDMC's second largest expenditure is on 'other services,' which, however, has been declining in nominal terms, from a high of 24 percent of total expenditure in 2004-05, decreasing to 18.9 percent in 2005-06, and to 14.73 percent to 2006-07. NDMC's third highest expenditure is in civil engineering services. It was 8.12 percent in 2004-05, and it has increased to 12.3 percent in 2005-06 and 11.71 percent in 2006-07, in nominal terms. In the chapter on expenditure needs and fiscal gaps, we assess the adequacy of NDMC's spending (in real terms) on relevant services against certain norms.

**Table 4.7: NDMC Expenditure (Plan + Non Plan) on Various Heads**

<b>Expenditure Component</b>	<b>2004-05 (Actual)</b>	<b>2005-06 (Revised Estimates)</b>	<b>2006-07 (Budget Estimate)</b>
	<b>% of Total Expenditure</b>	<b>% of Total Expenditure</b>	<b>% of Total Expenditure</b>
Education	4.81%	5.00%	5.48%
Medical & Public Health	7.95%	9.72%	11.46%
Other Social Services *	2.33%	3.19%	4.04%
Other Services (Palika Parking + Indoor + Barat Ghars + Contribution to Natural Calamities)	0.26%	0.36%	0.46%
Electric Supply	38.33%	39.17%	40.61%
Water Supply & Sanitation	6.37%	6.67%	5.42%
Roads (Civil Works + Electricity Works + Roads & Bridges)	1.97%	2.01%	2.63%
<b>Other Municipal Works**</b>			
Civil Engineering Department	8.12%	12.30%	11.71%
Electrical Engineering Department	1.36%	1.58%	1.76%
Department of Architecture & Environs	0.17%	0.15%	0.18%
Total Expenditure of Other Municipal Works <b>apart from</b> Civil Engineering, Electrical Engineering & Architecture & Environs	0.17%	0.35%	0.93%
Others (Advances to Employees, External Assistance & Deposit Works)	4.16%	0.61%	0.59%
Others Expenditure	24.00%	18.90%	14.73%
Total Expenditure	100.00%	100.00%	100.00%

\*(Swimming Pools, Community & Multipurpose Halls, Working Girls Hostel, Funeral Van Services, Gardens, Parks & Fountains, Schools for Mentally retarded Children, Shishu Kalyan Kendra etc.)

\*\* Apart from Civil Engineering & Electrical Engineering Department, other municipal works consists of the expenditure on Department of Architecture and Environs and MLA's constituency fund.

*Source:* NDMC budget, 2006-07 and authors' computation.

Figure 4.1 summarizes NDMC's expenditure on the most important services, just for 2004-05. These data are in real terms. While in nominal terms, the largest chunk of NDMC's expenditure is on electricity supply, in real terms, NDMC spent only 11 percent of its total expenditure on electric supply (Figures 4.1). In real terms, a majority of NDMC's expenditure appears to be on 'other services.'<sup>9</sup> Expenditure on water supply & sanitation is very low; it was

<sup>9</sup> Other expenditures include social services (swimming pools, community & multipurpose halls, working girls hostels, funeral van services, gardens, parks & fountains, schools for mentally retarded children, *Shishu Kalyan Kendra* (child welfare centres)), other services (Palika parking+indoor+barat

only 0.01% of total expenditure in real terms.<sup>10</sup> Expenditures on basic services such as these seem quite low, whereas expenditure on other services is unduly high, very similar to what we found with respect to Kolkata’s ULBs as well (NIPFP 2007). While this is partly attributable to the public good and merit nature of some of these ‘other’ services, it is clear that spending on basic services is highly inadequate.

**Figure 4.1: Proportion of NDMC’s Real Expenditure (in 1999-00 Prices) on Major Services, 2004-05**

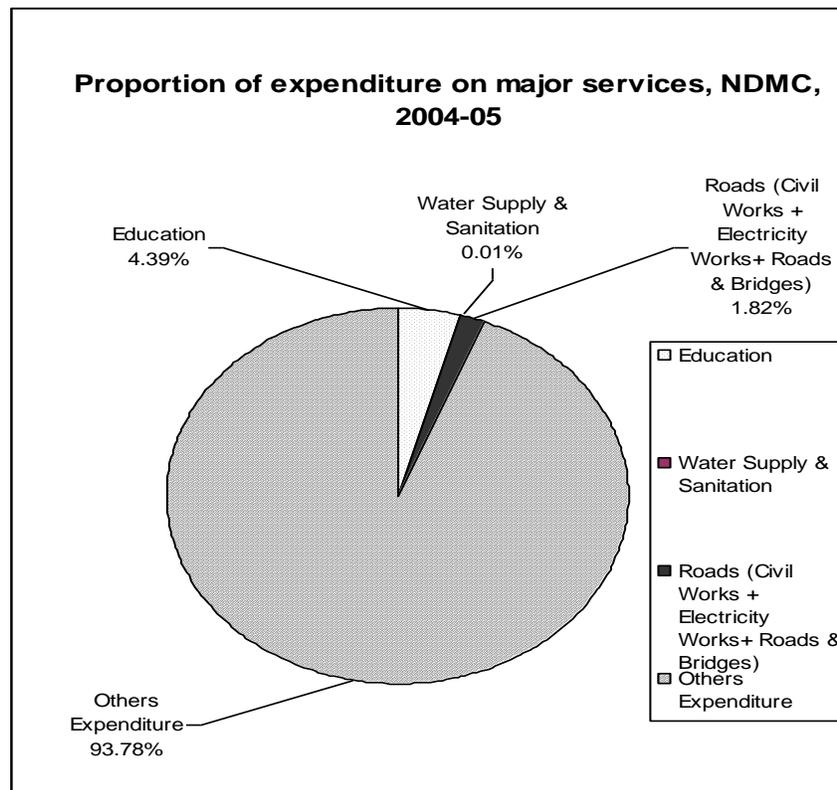


Table 4.8 summarizes the proportion of NDMC’s capital expenditure out of total plan expenditure, by various services. From this table we can see that among the total plan expenditures, NDMC spent 49.4% for roads & bridges in 2004-05. But in 2005-06 expenditure on roads & bridges reduced to 30.05% and in 2006-07 it reduced to 18.02%, all in nominal terms. In 2006-07 works on MLA constituency fund was 43.24%. This seems to be the largest chunk of NDMC’s plan expenditure in 2006-07.

*ghars*+contribution to natural calamities), electrical engineering department, expenditure on other municipal works apart from what is included in civil engineering, electrical engineering, architecture and environs.

<sup>10</sup> In NDMC budget there is nothing mentioned differently for sewerage.

**Table 4.8: NDMC's Capital Expenditure Out of Total Plan Expenditure**

	<b>2004-05 (Actual)</b>	<b>2005-06 (Revised Estimates)</b>	<b>2006-07 (Budget Estimate)</b>
<b>Expenditure Component</b>	<b>% of Total Plan Expenditure</b>	<b>% of Total Plan Expenditure</b>	<b>% of Total Plan Expenditure</b>
Roads & Bridges	49.40%	30.05%	18.02%
Water Supply & Sanitation	6.6%	9.4%	5.6%
Housing	0.00%	0.00%	0.00%
Urban Development	5.86%	5.63%	3.38%
Education	5.01%	12.77%	9.01%
Medical	12.62%	7.51%	4.50%
Public Health	2.49%	2.25%	2.25%
Welfare of SC/ST/OBC	0.00%	0.00%	0.45%
Agriculture & Allied Services	0.00%	0.00%	0.00%
Power	0.00%	0.00%	0.00%
Sectt. Economic Services	0.00%	0.00%	0.00%
Nutrition	3.60%	7.51%	4.50%
Labour & Labour Welfare	0.00%	0.00%	0.00%
Social Welfare	-0.01%	0.00%	0.00%
Sports & Youth Services	0.00%	0.00%	9.01%
MLA Constituency Fund	14.39%	24.87%	43.24%
Total Plan Expenditure	100.00%	100.00%	100.00%

Source: NDMC budget, 2006-07 and authors' computation.

**Table 4.9: Proportion of Revenue & Capital Expenditure by Service (Plan + Non Plan)**

	<b>2004-05 (Actual)</b>		<b>2005-06 (Revised Estimates)</b>		<b>2006-07 (Budget Estimate)</b>	
	<b>% of revenue exp</b>	<b>% of capital exp</b>	<b>% of revenue exp</b>	<b>% of capital exp</b>	<b>% of revenue exp</b>	<b>% of capital exp</b>
Education	98.36%	1.64%	94.28%	5.72%	90.21%	9.79%
Electric Supply	99.13%	0.87%	95.73%	4.27%	94.92%	5.08%
Water Supply & Sanitation	99.35%	0.65%	98.76%	1.24%	95.62%	4.38%
Roads (Civil Works + Electricity Works + Roads & Bridges)	49.56%	50.44%	55.27%	44.73%	39.46%	60.54%
Others Expenditure	99.99%	0.01%	99.99%	0.01%	98.66%	1.34%
Total Expenditure	96.60%	3.40%	94.81%	5.19%	88.21%	11.79%

Source: NDMC and Authors' Computations.

Table 4.9 slices NDMC's expenditure on various services by revenue and capital. We see that in the case of all services, revenue expenditure (salaries, establishment, contingency, O&M) takes precedence over capital projects, with the exception of roads (civil works + electricity

works + roads & bridges), where more than 40 percent was spent on capital projects in all the years of our study for NDMC. Indeed in 2006-07, capital expenditure on roads accounted for 60.54 percent of total expenditure on the sector, the remaining 40 percent being spent on revenue expenditures. Unfortunately, we did not have data on the physical level of services (roads and motor vehicles) for NDMC separately to evaluate its capital expenditures on the service.

The next section briefly summarizes the information we have from the Delhi Cantonment Board, before we discuss our findings regarding expenditure needs, revenue capacities and the fiscal health, primarily of the MCD, in the final chapter.

### **Finances of Delhi Cantonment Board**

There are 62 cantonment boards in the country which come directly under the jurisdiction of the Ministry of Defense, Government of India. Delhi Cantonment Board (DCB) is a local government providing services in the defense area of Delhi Urban Agglomeration. According to 2001 census, the area of Delhi Cantonment Board is 10,521 acres or 42.58 square kilometers (Chapter 1) and there has been no change in its boundaries since 1924. It has a 2001 census population of 1,31,181, among which 91,756 are civilians and 39,425 are directly related to defense. According to the census 2001 the number of households in Delhi Cantonment is 65,501. There are no people below the poverty line.

Similar to the other local governments in Delhi, the DCB constructs roads, buildings, provides electricity and water supply to its residents. For security reasons, the construction works are done by Military Engineering Services (MES) in the defense area. The information available from the DCB was very sparse, with the result that we were unable to include it in the computation of expenditure needs, revenue capacity or fiscal gaps. We have made an attempt in this section to summarize whatever little information we were successful in obtaining from the DCB, after many visits and several phone calls to follow up. However, as explained earlier, given that DCB accounts for a very small part of the Delhi UA, this will not change our assessments of Delhi's fiscal gaps significantly.

### **Revenues**

The sources of revenue of the Delhi Cantonment Board are:

1. House Tax
2. Water Tax

3. Conservancy Tax
4. Advertisement Tax
5. Professional Tax
6. Rent from community halls on a daily basis.(DCB has 3 community halls)

House tax is imposed on Rateable Value of land & building & rate of house. There are two different rates structure on domestic and commercial houses.

**Table 4.10: Tax Rates on Domestic Houses**

Value of the property	Tax rate
Up to Rs. 1000	10%
Over Rs. 1000 to Rs.2000	Rs. 100 + 11.5% of the amount by which the rateable value exceeds Rs.1000
Over Rs. 2000 to Rs. 5000	Rs 215+12.5% of the amount by which the rateable value exceeds Rs. 2000.
Over Rs. 5000 to Rs. 10000	Rs 590+15% of the amount by which the rateable value exceeds Rs. 5000
Over Rs. 10000 to Rs. 15000	Rs.1340+18% of the amount by which the rateable value exceeds Rs. 10000.
Over Rs. 15000 to Rs. 20000	Rs 2240+20% of the amount by which the rateable value exceeds Rs. 15000
Over Rs. 20000	Rs 3240+25% of the amount by which the rateable value exceeds Rs. 20000

*Source:*Delhi Cantonment Board.

**Table 4.11: Tax Rates on Commercial Buildings**

Value of the property	Tax rate
Upto Rs. 2000	15%
Over Rs.2000 to Rs.10000	Rs.300+ 18% of the amount by which the rateable value exceeds Rs. 2000.
Over Rs.10000 to Rs.15000	Rs. 1740+ 20% of the amount by which the rateable value exceeds Rs. 10000.
Rs.15000 to Rs.20000	Rs. 2740+ 23% of the amount by which the rateable value exceeds Rs. 15000.
Over Rs.20000 to Rs.30000	Rs. 3390+ 27% of the amount by which the rateable value exceeds Rs. 20000.

*Source:*Delhi Cantonment Board.

**Table 4.12: Rates for Other Taxes**

Type of Tax	Minimum Tax Rate	Maximum Tax Rate
Water Tax	Rs.3	Rs.80
Conservancy Tax	Rs. 2	Rs. 5
Advertisement Tax	Rs.45	Rs.960
Professional Tax	Rs.1	Rs. 250

*Source:*Delhi Cantonment Board.

In DCB, property tax is imposed on private properties from which the collection of property tax was Rs.6,212,946 in 2005-06 (nominal terms). Based on our discussions with the officials, DCB has no rent control. Given that most of the area under Delhi Cantonment belongs to defense, they are out of the coverage of property tax. Even among the property tax assessees under the coverage of taxation, only 60 percent are regular tax payers. DCB uses “Fixed Ratable Method” for levy of the property tax, and the unit area method, adopted by the MCD, is not being used.

### **Grants:**

DCB gets grants from Delhi State Government only for education. In 2004-05, DCB got Rs.3,611,733 and in 2005-06, Rs.4,154,966 from the state government of the NCT of Delhi. From the central government, DCB got Rs.36,300,000 in 2004-05 and Rs.399,030,000 in 2005-06, as grants.

## **Expenditure and Services**

### ***Solid Waste and Sanitation***

In the DCB, no separate accounts are maintained for solid waste collection, disposal and sanitation. In the DCB, daily, 60 metric ton garbage is generated and of this, 40 metric tons are collected and disposed, accounting for a solid waste collection efficiency of 66 percent. They have no recycling system in their area, but they send the collected garbage to an area nearby (Okhla) and after that the disposition and recycle are taken care of by MCD. For cleaning the defense area, every year, DCB makes arrangement for an ‘army conservancy contract’ from where they finance their sanitation services. For garbage collection there is little private participation which exists. Only a few areas are given to private parties for garbage collection.

DCB has 50 public toilets out of which 27 are provided by DCB. In the DCB area, all households access their private toilets. For sanitation, in 2004-05, DCB’s total expenditure (including establishment and contingencies) was Rs.4,373,886 and in 2005-06 it was Rs. 6,977,265 (both in nominal terms). In 2005-06, the user charge was taken from every household at Rs. 20 per year. At the 2001 number of households (65,501), this turns out to be a revenue of Rs.1,310,020. There are 452 workers who are employed for sanitation and their minimum salary is Rs. 6050 per month. Most of them are illiterate i.e., unskilled. So it does appear that most of DCB’s expenditure on sanitation (Rs.3,525,600) is on salaries of these employees.

### ***Roads***

For security reasons, some parts of DCB are constructed by Military Engineering Services (MES), and the remaining roads are constructed and maintained by DCB. The total length of roads of DCB is 144 km. DCB follows the norms prescribed by Indian Road Congress. With an average width of these roads being 9 meters each, the DCB roads cover an average area of 1.296 square kilometers ( $144 \times 9 / 1000$ ). This represents only 3 percent of the DCB area of 42.58 square kilometers, which does appear inadequate. But without data on the number of vehicles, or other benchmarks, we are unable to assess this objectively.

### ***Education***

One of the important services of DCB is to provide primary education. It has 7 schools, out of which 3 are secondary, 3 are middle schools and 1 is pre nursery school. The completion rate is 100 percent. In these schools, the minimum salary of the teachers is Rs.11,000. We did not have information on the number of teachers in the schools, so it was not possible to determine what was spent on salaries alone. We do know that for education, DCB spent Rs.14,281,814 as establishment expenditure, Rs.1,978,336 as contingencies in 2004-05 and obtained Rs.3,611,733 as aid, as described in the section on grants (all in current terms). In 2005-06, the DCB spent Rs.12,516,257 as establishment expenditure, Rs.3,708,948 as contingencies and got Rs.4,154,966 as aid (all in nominal terms). Recall that DCB gets grants only for education.

### ***Water Supply***

DCB has its own water supply system which meets the demand in the civil area as well as in private households. Only for a small and uneven part of DCB (Naraina), water is being purchased from Delhi Jal Board. However, no information was available either on the physical level of water supply or their expenditures for us to make a determination regarding their adequacy.

Based on the data available from the DCB, it was not possible to include it in the computation of fiscal gaps. Accordingly, our assessment of expenditure needs, revenue capacities and fiscal gaps in the forthcoming chapter are based on time-series data for the MCD, one year for the NDMC and the DCB has been excluded.

## **CHAPTER 5**

### **EXPENDITURE NEEDS, REVENUE CAPACITY AND FISCAL GAPS**

#### **Expenditure Needs**

In the case of Delhi UA which consists of three local governments, it was not possible to adopt an econometric approach to estimate expenditure needs. Moreover, time-series data for a reasonably long period of time was not available for all the three local governments. Hence we had to adopt a structured case study approach, in which we rather computed expenditure needs by comparing actual expenditures of the three local governments over time, to relevant norms for various services. Further, most of the actual expenditures on various services, were available only for the MCD for a reasonable period of time, hence we were able to compute expenditure gaps, revenue potential, and fiscal gaps only for the MCD. Given MCD is also the largest local government in Delhi, this is reasonable to do.

#### **Water Supply**

When we intend to assess actual expenditures for the provision of any given service, it is necessary to compare it with some benchmark expenditure required to meet a certain physical level of the service. For doing this, we examined and studied various norms for the provision of the relevant services. After a detailed examination during our field visits and of existing studies relating to this area, we found very few studies dealing with ideal expenditure norms. Our discussion with officials in all cities indicated that while a physical requirement of 135 liters per capita daily (LPCD) (proposed by the National Commission on Urbanization) is broadly followed with respect to water supply, no expenditure norms are actually used in the case of water supply. For other services such as solid waste, sanitation/sewerage, roads and street lights, no expenditure or financial norms were being followed in any of the cities of our study.

Based on our discussion with the National Institute of Urban Affairs (NIUA), we found one study which summarizes various norms for most public services with which we are concerned, a NIUA Working Paper, by Mathur et.al. (2007). For water supply, and sewerage/sanitation, we used norms summarized in Mathur et.al. (2007). These are national norms for these services expressed in per capita terms. This paper by Mathur et al (2007) also summarizes state-specific norms for some states whose cities are included in this study, Delhi is not one of those. Further, the state-specific norms are also not disaggregated for various public services such as water supply, sanitation and so forth. In many cases, actual allocations by states for these services are summarized as norms. Given we are not interested in actual spending by the

states, but in a desired norm, we decided to use the national norms which are disaggregated for various public services and for which expenditures are stated separately for the cost of provision and of operations and maintenance (O&M) in constant prices and in per capita terms, summarized by Mathur et.al. (2007).

For water supply, the norm we use is summarized in Mathur et.al. (2007) and is based on a 1995 study by NIUA on the costs of urban infrastructure. In order to meet an average of 115-210 litres per capita daily (LPCD), this 1995 NIUA study suggests a norm of Rs.372.37 per capita (in 2004-05 prices) for the cost of provision of water supply in metropolitan areas, and the costs of O&M to be Rs.139.83 (in 2004-05 prices) per capita in metropolitan areas. It is interesting to note from the NIUA (1995)'s norms that the per capita requirements both for cost of provision and O&M keeps declining with size of city, reflecting scale economies.

Given the fact that we examine revenue expenditures on all services including water supply, we compared the per capita O&M requirement of Rs.139.83 (expressed in the NIUA study in 2004-05 prices per capita). Since all our data are in real terms with 1999-00 as the base, we converted the O&M norm from 2004-05 prices as the base, to 1999-00 as the base. In per capita terms, this norm turns out to be Rs.227.45 in 1999-00 prices.

Table 5.1 summarizes the non-plan expenditure of the Delhi Jal Board (DJB) on water supply in MCD over 1997-98 to 2004-05, in 1999-00 prices. As described in an earlier chapter, the DJB supplies water only to the MCD area. The NDMC and Delhi Cantonment Board make their own arrangements for providing water supply. We were not successful in obtaining information from the other two local governments regarding their water supply expenditure. Hence the revenue expenditures reported in Table 5.1 are for the MCD.

The DJB's per capita spending on water supply in the MCD area is well below the norm specified in all the years. On average, over the period 1997-98 to 2004-05, DJB spent an average of Rs.2.3 billion on revenue expenditure alone, the highest spending being in 1999-00 when it spent nearly Rs.6.4 billion on water supply. On a per capita basis, the DJB spent only Rs.181 on water supply as revenue expenditure in MCD, well below the desired norm (of Rs.227). So spending does appear to be a problem as far as water supply is concerned.

**Table 5.1: Summary of Revenue Expenditures for Water Supply, Delhi Jal Board**

Year	Revenue Expenditure for Water Supply* (with 1999-2000 prices)	PC Exp WS	PC Revenue/PC Expenditure	Expenditure Gap
1997-98	741,132,340.8	64.71	23.50%	-162.74
1998-99	3,952,243,587.7	331.67	27.27%	104.22
1999-2000	6,404,700,000.0	516.56	33.77%	289.11
2000-2001	1,311,988,338.4	101.70	28.04%	-125.75
2001-2002	2,055,643,971.1	153.14	23.99%	-74.31
2002-2003	1,330,609,392.0	95.27	40.61%	-132.18
2003-2004	1,314,189,216.0	90.43	46.93%	-137.02
2004-2005	1,445,248,053.5	95.58	38.84%	-131.87
<b>Average</b>	<b>2,319,469,362</b>	<b>181.13</b>	<b>32.87%</b>	<b>-46.32</b>

Source: Delhi Jal Board, and Authors' Computations.

On average, on a per capita basis, revenue receipts from water (water and drainage charges) cover only one-third of per capita expenditures. National urban reform programs such as the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) specify full cost recovery of expenditure (at least the cost of production of water) in a phased manner.

With the exception of a couple of years, the expenditure gap (the actual expenditure over and above the norm) is always negative with the result that on average, there is a shortfall of Rs.46.32 per capita, on water supply.

We had information on DJB's capital expenditures only for three years, which on average, was Rs.1.6 billion (in constant 1999-00 terms), with an average per capita spending of Rs.109, in 1999-00 prices. The norm specified by the NIUA (1995) study for the (capital) cost of provision of water supply is Rs.372.37 in 2004-05 prices for metropolitan areas. This turns out to be Rs.605.69 in 1999-00 prices, given there was an increase in the price index for water supply, gas and electricity over the period 1993-94 to 1999-00. So DJB's actual per capita capital expenditure on water supply is also woefully inadequate, being only one-sixth of the required spending.

### **Solid Waste**

We performed a similar exercise for other services as we did for water supply, as far as expenditure needs are concerned. For solid waste, we relied upon an Operations and Research Group (ORG) (1989) study which suggested norms for waste collection and transportation. The national norm suggested by this study is Rs.60-183 per capita (in 2004-05 prices) for waste collection (depending on the quantity of waste collected) and Rs.165 per capita for transportation

of the waste. That study assumes average waste generation level of 380 grams per capita per day. Their approach relies on the estimation of waste collected, and estimates vehicle demand based on transport options in terms of trucks, compactors or matador and trips, with the compactor being the most expensive.

Taking the higher end of the above estimates for solid waste generation, collection and transportation, we get a norm of Rs.348 per capita in 2004-05 prices, or Rs.282.27, when converted into 1999-00 prices.

We compared this norm to the actual expenditures of the local bodies on solid waste which refers to conservancy and street cleaning. Under this head, MCD spends money for conservancy, sanitation, garbage management. Various components included under these heads of expenditure are salaries, electricity and telephone charges for conservancy, sanitation, garbage management, hiring vehicles, diesel, petrol and oil stores, repairs of vehicles, and of wheel barrows, dustbin, and other forms of garbage management. Table 5.2 summarizes the total revenue and actual per capita expenditures on this sector by the MCD and the expenditure gap, when actual per capita expenditures are compared with the norm summarized above. We did not get data from the NDMC on solid waste even for a single year.

**Table 5.2: Summary of Revenue Expenditures on Solid Waste, Delhi Local Bodies**

<b>Year</b>	<b>Local Government</b>	<b>Exp on Conservancy, Street Cleansing (Solid Sanitation) (in Rupees, 1999-00 prices)</b>	<b>PC Exp-SW (in Rupees, 1999-00 prices)</b>	<b>Exp.Gap (in Rupees, 1999-00 prices)</b>
1994-95	MCD	1,606,171,861	157.99	-69.46
1995-96	MCD	1,736,643,072	164.17	-63.28
1996-97	MCD	1,787,480,293	162.40	-65.05
1997-98	MCD	2,206,000,279	192.63	-34.82
1998-99	MCD	2,405,629,937	201.88	-25.57
1999-2000	MCD	2,602,434,000	209.90	-17.55
2000-2001	MCD	2,457,667,603	190.51	-36.94
2001-2002	MCD	2,478,293,529	184.63	-42.82
2002-2003	MCD	2,602,268,736	186.32	-41.13
2003-2004	MCD	2,802,246,782	192.83	-34.62
2004-2005	MCD	3,070,952,018	203.09	-24.36
<b>Average, all</b>		<b>2,341,435,283</b>	<b>186.03</b>	<b>-41.42</b>

Sources: MCD, and Authors' Computations.

While the norm refers to collection of solid waste and its transportation, actual expenditure on solid waste consists of revenue expenditure as described above (it is worth noting that capital expenditures were not available for any service for the MCD or other local

governments). Keeping this caveat in mind, observe from Table 5.2 that during all the years of our study, MCD expenditures on street cleansing and conservancy are well below the norm. The average per capita expenditure by the MCD on solid waste is only Rs.186, well below the norm. On average, the expenditure shortfall on solid waste by the MCD is Rs.41 per capita, in 1999-00 prices.

## **Sewerage and Sanitation**

As described earlier, for sewerage and sanitation, we used the norm developed by NIUA (1995) for the cost of O&M. This, as summarized by NIUA (1995), is Rs.39.22 per capita for metropolitan areas in 2004-05 prices. We converted this to 1999-00 prices, using the appropriate price index for Delhi, which works out to Rs.31.81. We compared actual expenditures on sewerage and sanitation against this norm. Under this head, the MCD spends money for toilets, drainage system, and payment of water charges, storm water drains, desilting water, and waste water management. The comparisons of actual expenditures with norms are summarized in Table 5.3.

Table 5.3 shows that when compared with the norm, per capita spending on a basic service such as sanitation/sewerage is abysmally low in the MCD. On average, the per capita spending on this by the MCD alone is a meager Rs.6.35, compared with a norm of Rs.31.81, in 1999-00 prices. When NDMC's expenditure on this is taken into account for one year (the only year for which the relevant data were available from the NDMC), the average is well above the norm. However, even with NDMC included, overall, the average per capita expenditure gap compared with the norm is Rs.25.46.

The above suggests that spending could be part of the problem with delivery of basic services such as sanitation and sewerage, in areas served by the MCD.

In absolute and per capita (real) terms, NDMC's expenditure on sewerage and sanitation (for the one year for which data were available, 2004-05) is several times higher than that by MCD, and is more than four times than that required by the norm. This is in fact borne out by casual observation as well—the NDMC areas are better maintained than the MCD areas. The NDMC has many tourist places, gardens, embassies, and community halls which are better maintained than areas served by the MCD.

**Table 5.3: Summary of Revenue Expenditures on Sewerage and Sanitation, Delhi Local Bodies**

Year	Local Government	Exp on Scavenging, Drains & Sewers (Liquid) (in Rupees, 1999-00 prices)	PC Exp- Sewerage (in Rupees, 1999-00 prices)	Exp.Gap (in Rupees, 1999-00 prices)
1994-95	MCD	51,034,511	5.02	-26.79
1995-96	MCD	50,142,651	4.74	-27.07
1996-97	MCD	77,701,548	7.06	-24.75
1997-98	MCD	41,648,505	3.64	-28.18
1998-99	MCD	190,590,378	15.99	-15.82
1999-2000	MCD	262,314,895	21.16	-10.66
2000-2001	MCD	38,160,143	2.96	-28.85
2001-2002	MCD	28,498,331	2.12	-29.69
2002-2003	MCD	36,444,822	2.61	-29.20
2003-2004	MCD	34,129,016	2.35	-29.46
2004-2005	MCD	33,982,078	2.25	-29.57
2004-2006	NDMC	152,640,537	504.29	472.48
<b>Average, all</b>		83,107,285	47.85	16.04
<b>Average, MCD</b>		<b>76,786,080</b>	<b>6.35</b>	<b>-25.46</b>

Source: NDMC, MCD and Authors' Computations.

### Roads and Street Lights

In the case of roads and street lights, national norms were not readily available. Mathur et.al (2007) is silent regarding these services.<sup>11</sup> Based on our consultations with cities and various local governments, for these services, no state-specific or city-specific norms are being used. Hence we used norms developed by PricewaterhouseCoopers (2001) for towns of various sizes. These norms basically refer to the Zakaria committee norms for O&M expenditure, updated to 2000-01 prices. For roads and street lights, these norms are respectively Rs.43.45 and Rs.59.26 per capita (in 2000-01 prices), for towns with greater than two million population. For all the years for which we have the data for MCD, we compared the total of the norms for roads and public lighting (Rs.102.71) to actual expenditures on these services. For NDMC, the actual expenditure was available only on roads, hence only the norm for roads (of Rs.43.45 per capita) as been used for NDMC to calculate its expenditure gap.<sup>12</sup> The comparisons of the actual expenditure to the relevant norms are summarized in Table 5.4.

<sup>11</sup> We tried very hard, but were unable to get a copy of the NIUA (1995) draft report on the costs of urban infrastructure.

<sup>12</sup> Separate expenditure was incurred by the NDMC on electricity supply, but was unavailable separately for public lighting and other purposes.

For the MCD, revenue expenditure on roads and street lights includes road restoration, asphalt, maintenance and repairs of brick pavements, cement roads, *kachha* roads, school approach roads, strengthening and widening of roads, maintenance and repairs of civic & district centre, footpaths, maintenance and repairs of lights--roads, street lights, high & semi mast light & *dhobi ghats*.

On average, for all the local governments including NDMC, the expenditure gap is positive for roads, implying they spend more per capita on various activities described above, than that specified by the norm. However, it is clear from Table 5.4 that the positive expenditure gap is only because of the NDMC. When NDMC's expenditure on roads is excluded, on average, there is a deficit of Rs.6.74 per capita as far as spending on roads and public lighting by the MCD is concerned, with a couple of years (2001-02 and 2004-05) being exceptions.

**Table 5.4: Summary of Revenue Expenditures on Roads and Public Lighting, Delhi Local Bodies**

Year	Local Government	Exp on Roads & Public Lighting (in Rupees, 1999-00 prices)	PC Exp-Roads & Lights (in Rupees, 1999-00 prices)	Exp. Gap (in Rupees, 1999-00 prices)
1994-95	MCD	944,865,183	92.94	-9.77
1995-96	MCD	1,060,051,076	100.21	-2.50
1996-97	MCD	1,128,853,720	102.56	-0.15
1997-98	MCD	1,157,297,339	101.05	-1.66
1998-99	MCD	1,176,740,685	98.75	-3.96
1999-2000	MCD	1,213,332,000	97.86	-4.85
2000-2001	MCD	1,032,716,050	80.05	-22.66
2001-2002	MCD	1,397,003,625	104.07	1.36
2002-2003	MCD	1,181,165,471	84.57	-18.14
2003-2004	MCD	1,296,610,059	89.22	-13.49
2004-2005	MCD	1,578,423,367	104.39	1.68
2004-2005	NDMC	156,020,719	515.46*	472.01
<b>Average, all</b>		<b>1,110,256,608</b>	<b>130.93</b>	<b>33.16</b>
<b>Average, MCD</b>		<b>1,197,005,325</b>	<b>95.97</b>	<b>-6.74</b>

\* For NDMC, the expenditure refers to that on roads only. Expenditure on electric supply was available separately from the NDMC, but all of it was not for public lighting. Accordingly only the norm for roads has been used in calculating the expenditure gap for NDMC.

Sources: MCD, NDMC and Authors' Computations.

The expenditure shortfall is acute in some years (2000-01) when there is a deficit of nearly Rs.23 per capita on these services. On average, the MCD's per capita expenditure on roads and lights is Rs.96, (Table 5.4), which is inadequate taking into account the expenditure norm of Rs.103. At the average population estimated for MCD over the period 1994-95 to 2004-05 (12,496,586), this

deficit in expenditure turns to be Rs.84,226,990, in addition to what MCD is currently spending on roads and public lighting.

### Total Expenditure

The next step was to compare total expenditures on relevant services – water supply, solid waste, sanitation/sewerage, roads and public lighting -- to that specified by the norms. We did this in two ways. First, we compared expenditure on all relevant services to the total norm required for these services. Second, given water supply is an essential service but is not offered by the MCD, we compared MCD expenditure on relevant services (solid waste, sanitation and sewerage, roads, and public lights) to the total required just on these services, excluding water supply. This approach has the advantage that from a policy perspective, it makes sense to separate water supply from the MCD's expenditure, given it is not part of its expenditure responsibility. So expenditure needs have separate implications for the DJB, as much as they do for the MCD.

**Table 5.5: Summary of All Expenditures With and Without Water Supply, Delhi Local Bodies**

Local Government	Year	Total Actual PC Exp, with WS (in Rupees, 1999-00 prices)	EXP Comp with norm, WS (in Rupees, 1999-00 prices)	Total Actual PC Exp, w/o WS (in Rupees, 1999-00 prices)	EXP Comp with norm, w/o WS (in Rupees, 1999-00 prices)
MCD	1994-95	255.95	-388.29	255.95	NA
MCD	1995-96	269.12	-375.12	269.12	NA
MCD	1996-97	272.02	-372.22	272.02	NA
MCD	1997-98	362.03	-282.21	297.32	-119.48
MCD	1998-99	648.30	4.06	316.63	-100.17
MCD	1999-2000	845.48	201.24	328.91	-87.88
MCD	2000-2001	375.21	-269.03	273.51	-143.28
MCD	2001-2002	443.96	-200.28	290.82	-125.97
MCD	2002-2003	368.77	-275.48	273.50	-143.30
MCD	2003-2004	374.83	-269.41	284.40	-132.40
MCD	2004-2005	405.30	-238.94	309.73	-107.07
NDMC	2004-2005	1019.75	375.51	1019.75	602.95
<b>Average, all</b>		<b>470.06</b>	<b>-174.18</b>	<b>349.30</b>	<b>-39.62</b>
<b>Average, MCD</b>		<b>420.09</b>	<b>-224.15</b>	<b>288.36</b>	<b>-119.94</b>

\*In the case of NDMC, we do know their expenditure on water supply is included as part of the expenditures on scavenging, drains and sewers, but we do not know how much is actually spent on water supply. Hence we are unable to separate it out.

Sources: MCD, NDMC and Authors' Computations.

The total norm for spending on relevant services (including water supply) is Rs.644 per capita (in 1999-00 prices). Excluding water supply, this norm is Rs.417 per capita, again in 1999-00 prices. Table 5.5 summarizes the total actual per capita expenditure in Delhi on all services (including water supply), and total MCD spending on relevant services (excluding water supply), and comparison of each of these with the respective norms summarized in the relevant sections above.

Table 5.5 confirms that with or without water supply, the expenditure gaps for Delhi (i.e., the extent to which actual expenditures on these services is above or below the norm) for all services (both for MCD and DJB put together) are negative. This is the case because the MCD and DJB's spending on various services and water supply respectively are well below the norm. This is despite the fact that the DJB, even though it was constituted through an act of Delhi's Legislative Assembly (<http://www.delhijalboard.nic.in/>), is more in the nature of a commercial utility, similar to water boards in other cities of the country (e.g., Bangalore Water Supply and Sewerage Board, Chennai Metropolitan Water Supply and Sewerage Board, Hyderabad Metropolitan Water Supply and Sewerage Board).

When the total expenditure on relevant services (excluding water supply) is taken into account, and compared with the norm for these services, we find the expenditure shortfall is even more acute in all years, for MCD spending. On average, the expenditure shortfall is Rs.119.94 per capita, in 1999-00 prices (Table 5.5). This shortfall is especially acute in some years (e.g., 2002-03 and 2000-01) when there is a gap of nearly Rs.143.28 and Rs.143.30 per capita respectively. Taking the average MCD population over the years, a gap of Rs.143.30 per capita implies an incremental expenditure requirement of Rs.1.8 billion, just on the relevant services, in constant 1999-00 terms. The average gap of Rs.119.94 implies an extra expenditure requirement of nearly Rs.1.5 billion by the MCD.

## **Revenue Capacity Estimations**

Revenue capacity refers to the maximum revenue that the municipality can generate given its resources, inter governmental transfers and its handles to generate revenues. It is a normative measure summarising the true revenue potential of a municipality. The correct estimation of revenue potential involves identifying an 'ideal base' on which an 'ideal rate' can be applied to extract the potential of the city to the fullest extent.

The most crucial step in estimating the revenue capacity of a municipality is the estimation of Gross City Product (GCP), which reflects the income of the municipality. In India,

Figures for GCP are not available. For MCD we have calculated the GCP on the basis of the non-primary sector GDP, comprising of the secondary and tertiary sectors, for the state of Delhi. The reason behind this is simple yet intuitive. The activities generated in the urban areas rarely belong to the primary sector category. So, it would not be totally incorrect to take the non-primary GDP of Delhi as a proxy to generate GCP for MCD<sup>13</sup>.

To arrive at the MCD level GCP from the non-primary sector GDP of Delhi we take the per capita Figures at the state level non primary sector GDP and multiply it by the MCD population for the respective years. This way we generate the GCP for MCD<sup>14</sup>. Column 2 and 3 of Table 5.6 give the absolute and per capita GCP Figures for our period of study (95-96 to 04-05) respectively.

After we generate the figures for GCP we have to find an ideal proportion which if applied to this GCP will generate the maximum revenue for the municipality. Now to get such a rate we examine the ratios of actual revenues generated by MCD to the GCP estimates derived by us for the timeframe for the study, which is recorded in column 4 of Table 5.6. We find that on an average over the period 95-96 to 04-05, MCD has been raising 2.2% of its GCP as revenues. We propose to apply 3 per cent on the GCP figures to arrive at the revenue capacity estimates of MCD.<sup>15</sup> We find that average of the revenue capacity Figures estimated for the said period of ten years amounts to Rs.1627,00,00,000 in 99-00 prices which is 136% of the average actual revenue for the same period (Rs. 1199,00,00,000 in 99-00 prices). Column 5 and 6 of Table 5.6 records the GCP figures in absolute and per capita terms for MCD for our period of study respectively.

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<sup>13</sup> District level GDPs of the non-primary sector, though a better option, could not be used for two reasons. First, District Level GDPs are not available for the state of Delhi. Second, MCD is a part of more than one district, so generating the GCP for MCD on the basis of non-primary sector GDP at the district level for multiple districts would have been cumbersome. Also, the territory of the state of Delhi and that of the Urban Agglomeration of Delhi is almost the same. Thus errors due to taking into account non-primary GDP of rural areas of the state of Delhi in MCD income would be.

<sup>14</sup> This implicitly assumes that the per capita non-primary GDP for the state of Delhi is the same as the per capita GCP for MCD. But given that 94% of the area of Delhi is covered by MCD and 97% of the population of Delhi resides in MCD area, the assumption is not too unrealistic.

<sup>15</sup> The ratio of Revenues collected by Urban Local Bodies in India to the non-agricultural component of its GDP is found to be around 1% (Source: Twelfth Finance Commission Report, Central Statistical Organisation estimates of Sectorwise GDP). The same ratio computed on the basis of the estimated GCP in our study is higher. This can be justified on the ground that Delhi is one of the highest income states in India and given the rapid urbanization the urban agglomeration is undergoing, the potential for revenue generation in the ULBs are also increasing.

**Table 5.6: Estimated Revenue Capacity for MCD (Rs. in 1999-00 Prices)**

Year	GCP	PCGCP	Ratio of Actual Revenue to GCP	Revenue Capacity Calculated as 3 % of GCP	Per Capita Revenue Capacity	Per Capita Actual Revenue	Per Capita Own Revenue Capacity	Ratio Of Revenue Capacity To Actual Revenue
1	2	3	4	5	6	7	8	9
1995-96	347,000,000,000	32821.6	2.20%	10,400,000,000	984.65	714.71	720.81	138%
1996-97	394,000,000,000	35773.58	2.10%	11,800,000,000	1073.21	747.63	796.01	144%
1997-98	454,000,000,000	39648.99	1.90%	13,600,000,000	1189.47	742.31	945.61	160%
1998-99	474,000,000,000	39820.11	2.30%	14,200,000,000	1194.6	904.16	797.45	132%
1999-00	498,000,000,000	40194.07	2.40%	15,000,000,000	1205.82	950.80	905.86	127%
2000-01	568,000,000,000	43993.54	2.20%	17,000,000,000	1319.81	965.20	991.6	137%
2001-02	590,000,000,000	43977.22	2.40%	17,700,000,000	1319.32	1039.71	1014.1	127%
2002-03	625,000,000,000	44731.95	2.30%	18,700,000,000	1341.96	1044.68	994.65	128%
2003-04	694,000,000,000	47730.39	2.10%	20,800,000,000	1431.91	1019.07	1072.2	141%
2004-05	783,000,000,000	51812.74	2.20%	23,500,000,000	1554.38	1145.45	991.64	136%
Averages	542,700,000,000	42050.42	2.21%	16,270,000,000	1261.51	927.37	922.993	137%

*Source:* MCD Budgets, Statistical Abstract, Central Statistical Organisation, Authors' Computations

We find that on an average the revenue capacity estimates are 137% of the actual revenues generated which means given its performance for the last ten years MCD can raise additional revenues to the extent of (on an average) 37% of the revenues it already generates. The details for all the years are given in column 9 of table 5.6. Comparing columns 6 and 7 of Table 5.7 we find that the average difference in the actual and potential revenues in per capita terms amounts to Rs 334.14 at 99-00 prices which means given its performance for the last ten years on an average MCD is capable of raising additional revenue to the extent of Rs. 334.14 per person living in the area.

Total revenues of MCD have an 'external assistance' component comprising of the grants and shared taxes the rates for which are not totally under the control of the municipality. As a step towards a more realistic analysis of revenue capacity of MCD, an estimation of MCD own revenues are also attempted. The steps are as follows:

First we calculate the ratios of actual own revenues to actual total revenues for each of the years. Then we multiply these ratios with our estimated revenue capacity to generate the estimates for per capita own revenue potential. It has been found that the average difference in the actual and potential own revenues in per capita terms turns out to be around Rs.192.24 in 99-00 prices. The details are given in column 8 of Table 5.6.

Since property tax is the main source of revenue of the municipality and given the worldwide evidence of under-valuation of properties and thus unutilized potentials for revenue

collections for ULBs, we have done some simulations on the basis of the estimated revenue capacities and built up scenarios for estimated property tax potentials for MCD. The steps involved are the following.

First, taking the average proportion of property tax collection (including transfer duties) as calculated to be around 50 per cent of the total revenues generated by MCD over the past ten years, we have calculated the property tax potential as 50 per cent of the estimated revenue capacities. The values are reported in column 2 of the Table 5.7 as 'P'. Column 3 of the same table shows that on an average the property tax potential calculated on the basis of the estimated revenue capacity is 146 per cent of the property taxes actually collected, that is to say that the collection of property taxes can be increased by 46 per cent on an average if the estimated revenue capacity can be realized for MCD.

**Table 5.7: Property Tax Collection with Estimated Revenue Capacity**

Year	Property Tax Potential Calculated as 50% of Total Revenue Capacity (P)	Ratio of Property Tax Potential to Actual Property Tax Collection	Estimated Demand for Property Tax Assuming 60% Collection Efficiency on Actual Property Tax Collection (D)	Targeted Property Tax Collection with 90% Collection Efficiency (T)	P/T	Estimated Collection Efficiency (P/D)
1	2	3	4	5	6	7
1995-96	5,207,877,206.00	150%	5,792,059,063.00	5,212,853,157.00	100%	90%
1996-97	5,906,152,260.00	144%	6,834,658,767.00	6,151,192,891.00	96%	86%
1997-98	6,811,073,615.00	137%	8,284,887,090.00	7,456,398,381.00	91%	82%
1998-99	7,117,493,061.00	131%	9,020,981,351.00	8,118,883,216.00	88%	79%
1999-00	7,475,284,920.00	125%	9,939,613,333.00	8,945,652,000.00	84%	75%
2000-01	8,513,259,956.00	131%	10,863,000,000.00	9,776,361,751.00	87%	78%
2001-02	8,854,742,533.00	139%	10,585,000,000.00	9,526,495,824.00	93%	84%
2002-03	9,371,458,479.00	146%	10,706,000,000.00	9,635,045,752.00	97%	88%
2003-04	10,405,000,000.00	151%	11,488,000,000.00	10,339,000,000.00	101%	91%
2004-05	11,752,000,000.00	205%	9,568,929,427.00	8,612,036,484.00	136%	123%
Average	8,141,385,266.00	146%	9,308,244,086.00	8,377,419,677.00	97%	88%

*Source:* MCD Budgets, Authors' Computations

Next, from the actual property tax collection data, we have calculated the demand for property tax by assuming 60 per cent collection efficiency for MCD<sup>16</sup>. Figures for the estimated

<sup>16</sup> Collection efficiency figures for MCD are not available for all the years. So we have used the figure at the all India level.

demand are given in column 4 of the Table 5.7 as 'D'. Column 5 of the same table gives the targeted tax collection levels as 'T' as 90 per cent of the estimated property tax demand Figures 'D' based on our calculation of revenue capacity. Column 6 compares 'P' and 'T' and we find that on an average the estimated property tax potential P is 97 per cent of the targeted level T.

We have also attempted to estimate the proportion of the potential tax collection levels P to the estimated demand D which gives the estimated collection efficiency Figures in the scenario where property tax potential is fully realized. The values are reported in column 7 of the Table 5.7 and we find that on an average it is equal to 88 per cent. Thus we can infer that given the past ten years' performance, to realize the property tax potential for MCD based on our calculation of revenue capacity and estimated demand for property taxes, the collection efficiency required is around 88%, which is close to the collection efficiency target of 90 per cent at the all India level. So the estimated revenue capacities are in line with the overall policy reforms in municipal finances in India.

### **Concluding Remarks: Assessment of Fiscal Health of MCD**

A common indicator for assessing the fiscal health of a municipality is the fiscal gap measured by the difference between its revenue capacity and total expenditure need. Expenditure need for each service gives the expenditure requirement of a municipality to provide the service maintaining some qualitative and quantitative standards prescribed by existing norms for the service. A standard practice is to convert the norms for different services to per capita financial requirements so that they can be added up to give the total expenditure need for a municipality providing a vector of services.

The problem of estimating the fiscal gaps as numbers indicating the differences between the revenue capacity and expenditure need for MCD is two fold.

First, two of the major services considered for the study, water supply and sewerage (partial responsibility) are not provided by MCD but by DJB, which is a separate body. So if we take into account the expenditure needs for these two services in MCD's total expenditure need, it would not reflect the true state of affairs. On the other hand the revenue capacities are defined and derived in terms of the income of the municipality. Thus we have the total expenditure need estimates divided between MCD and DJB and revenue capacity estimates for MCD for which comparison of the two becomes difficult.

Second, for MCD the problem with estimating the total expenditure need is that the norms for only selected services it provides, like sanitation, solid waste management, roads and

street lighting, can be reduced to per capita expenditure terms and can thus be added. But national norms for a service like education, for which MCD spends on an average around 23% of the total expenditure, cannot be reduced to per capita terms<sup>17</sup> and thus cannot be added to the norms of the services mentioned above. Again there is a considerable proportion of expenditure (around 46% on an average) spent on ‘other services’<sup>18</sup> for which no norm can be defined. Thus a comparison between the total expenditure needs of the selected services mentioned above for which norms are convertible to per capita financial requirements with the estimated per capita revenue capacity would give an incomplete characterization of fiscal health for MCD.

One way out could be to analyse in brief the finances and Figures relating to service delivery for DJB separately, given the limited availability of data. Figures 3.1 (Chapter 3) summarises the revenue and expenditure gaps for DJB which indicate that revenue receipts for none of the years considered could cover the expenditures. Table 3.1 of the same chapter gives a summary of the per capita finances and we can estimate a non plan deficit of Rs 124 on an average in per capita terms. From Table 3.6 and 3.7 we get an idea of the physical levels of water supply and sewerage services in MCD. The first two rows of Table 3.6 show that for recent actual data as well as projections, DJB is unable to meet the demand for water supply as the levels of supply are much below than those of water demand. Also, from Table 3.7 we get some facts related to the coverage in terms of population by sewerage which is only around 45 per cent, much below that the targeted full coverage. We can also refer to the expenditure gaps discussed in the section on expenditures of this chapter which throw some light on the actual state of affairs.

We have, however, attempted to analyse different aspects the fiscal health of MCD by comparing the actual expenditure (instead of total expenditure need) with different components of actual revenue and the estimated revenue capacity. These expenditures club together both the MCD’s expenditures and DJB’s expenditures. We have calculated the total expenditure need per capita on water supply, sewerage, solid waste management, sanitation, roads and street lights for which norms in terms of per capita financial requirements can be added and found that to be equal to Rs. 644.24 in 99-00 prices which is not likely to vary across years. Column 2, Table 5.8

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<sup>17</sup> See Mathur, M.P., Rajesh Chandra, Satpal Singh and Basudha Chattopadhyay (2007), Norms and Standards of Municipal Basic Services in India, National Institute of Urban Affairs (NIUA) Working Paper 07-02, January.

<sup>18</sup> Other services means expenditures on general supervision, collection of revenue etc., medical relief, garden and open spaces, reserve for unforeseen charges, libraries, scavenging, building, land acquisition & management, fire brigade, licensing, removal of encroachments, markets & slaughter house, development charges, miscellaneous including petty new work & departmental charges under the head ‘Specific Need’.

gives the gap between the per capita revenue capacity and the per capita expenditure norm on the selected services mentioned above<sup>19</sup>.

We have also calculated the expenditure norm as a percentage of actual revenue and revenue capacity estimates and found that total Figures for expenditure norms for the selected services on an average constitutes about 71 per cent of the actual revenues<sup>20</sup> and 52 per cent of the revenue capacity estimates. Columns 3 and 4 give the year wise details for these Figures.

However, when we compare the actual total expenditures including all services to the actual revenues we find that on an average total expenditures are 105 per cent of the actual revenues meaning that there is a gap of 5 per cent on an average to finance the total expenditures from the present revenues. However, the average proportion of actual expenditures to revenue capacity turns out to be around 77 per cent showing a surplus of 13 per cent on an average. Columns 5 and 6 give the year wise details of the ratios with respect to actual and potential revenues respectively.

Since the total revenues contain transfers in it we have also analysed the proportion of actual expenditures to own revenues and found that on an average the ratio turns out to be 144 per cent showing a gap of 44 per cent if MCD intends to finance the expenditures through own sources. Column 7 gives the year wise details of these ratios. We have also calculated the ratio of total expenditure to own revenue potential and found that average over the years turns out to be around 105 per cent which means once MCD realizes the own revenue potentials, the deficit reduces to 5 percent if it intends to finance the expenditure by its own sources. The year wise details are given in column 8.

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<sup>19</sup> It is surprising that we get surpluses for all the years which is unlikely to reveal the true state of affairs. This is because we have not taken into account some of the major services provided by MCD. If we exclude water supply and sewerage the positive gap will even widen, which is why we restrict our analysis to the scenario where it is assumed that MCD provides the two services taking into account DJB's expenditures on the said services.

<sup>20</sup> Due to non-availability of detailed data on education sector for MCD we are not in a position to say whether the additional 39 per cent of the total revenue amounts to a sufficient amount to be spent with the norm on education satisfied.

**Table 5.8: Different Aspects of Fiscal Health for MCD**

Year	Gap Between Per Capita Revenue Capacity and Per Capita Expenditure Norm on Selected Services	Expenditure Norm as a Percentage of Actual Revenue	Expenditure Norm as a Percentage of Revenue Potential	Total Expenditure As Percentage of Actual Revenue	Total Expenditure as Percentage of Revenue Potential	Total Expenditure as Percentage of Own Revenue	Total Expenditure as Percentage of Own Revenue Potential
1	2	3	4	5	6	7	8
1995-96	340.41	90%	65%	100%	73%	137%	99%
1996-97	428.97	86%	60%	100%	70%	135%	95%
1997-98	545.23	87%	54%	112%	70%	141%	96%
1998-99	550.36	71%	54%	111%	84%	166%	114%
1999-00	561.58	68%	53%	115%	91%	153%	124%
2000-01	675.57	67%	49%	106%	78%	141%	106%
2001-02	675.08	62%	49%	104%	82%	135%	112%
2002-03	697.72	62%	48%	102%	79%	137%	108%
2003-04	787.67	63%	45%	102%	72%	136%	99%
2004-05	910.14	56%	41%	100%	74%	157%	101%

*Source:* Authors' Computations

To sum up, a few points can be emphasised. Estimating the accurate Figures for fiscal gaps of MCD is constrained by a set of factors. Since DJB provides the two basic services viz. water supply and sewerage, it would have been appropriate if we can analyse the fiscal gaps of MCD and DJB separately. But there is a problem. The data available on the financial accounts of DJB and the physical levels of service provision by them do not permit us to come up with the estimates for maximum revenue generation for DJB. So, it is not possible to give correct estimates for fiscal gaps for DJB in terms of the difference between the maximum revenue potential and the expenditure need for the two services provided by DJB. We have however derived the differences in the revenue expenditures and revenue receipts and base our opinion on the basis of these estimates.

Another way of looking at the fiscal gap analysis is to club the expenditures of both MCD and DJB and compare with the revenue capacity estimated for MCD on the basis of non-primary sector GDP for the state of Delhi. The problem with this approach is that the estimation of total expenditure needs for MCD becomes difficult as financial norms for every service cannot be added to get an estimate of aggregate expenditure need as all of them cannot be reduced to a common denomination. So the expenditure need Figures generated by this approach are

underestimations of the true expenditure needs of MCD, assuming that water supply and sewerage is provided by them. An immediate outcome of the analysis are the positive fiscal gaps, which are contrary to the real situations which can be verified through a careful scrutiny of the available data on physical levels of services, which are well below the targeted norms. However, non availability of detailed data on physical levels of all the services adds to the limitations of the study. The analysis of expenditure gaps and investment requirements in the previous section (Table 5.5, subsequent discussion) clearly indicates that there are possibilities of underutilization of resources in the ULB which is why higher resources can not guarantee higher levels of spending for service provision.

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