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Determinants of Municipal Revenues in Indian Cities

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Preface

The study "Determinants of Municipal Revenues in Indian Cities" has been carried out by the National Institute of Public Finance and Policy supported by the Ministry of Housing and Urban Affairs (MoHUA) under the MoHUA – NIPFP research programme.

This study examines the determinants of municipal revenues in urban India, with particular emphasis on property tax collections. Using audited financial statements of 183 municipal corporations across 22 states for the period 2019- 20 to 2021-22, the study explores the factors influencing municipal revenue generation.

The study team consists of Manish Gupta and Aakash Gupta. The opinions and analyses here are those of the authors only. The members of the Governing Body of the National Institute of Public Finance and Policy are in no way responsible for these.

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Abstract

This paper examines the determinants of municipal revenues in urban India, with particular emphasis on property tax collections. Using audited financial statements of 183 municipal corporations across 22 states for the period 2019- 20 to 2021-22, the study explores the factors influencing municipal revenue generation. The analysis reveals substantial inter-municipal variations in revenue performance and identifies key determinants through both descriptive analysis and regression estimation. In the year 2021-22 property tax collections account for approximately 0.07 percent of GDP and Rs. 927 per capita on average. The empirical analysis demonstrates that city size, capital expenditure, intergovernmental transfers, and governance quality are important determinants of municipal revenue generation. The findings suggest that larger cities exhibit higher per capita property tax revenues, while cities with investment-grade credit ratings significantly outperform those without such ratings. Additionally, the revenue generation capacity varies substantially across different categories of municipal corporations, with variations linked to municipal size and fiscal management among other things.

1. Introduction

Urban local bodies (ULBs) in India have been constitutionally mandated to assume a greater role in urban governance and service delivery following the 74th Constitutional Amendment Act, 1992. However, this devolution of functions has not been accompanied by adequate revenue devolution, creating a persistent fiscal gap between municipal functions and revenue sources (Vaidya, 2009). The problem is particularly acute even for property tax, which constitutes the primary own-source revenue for most municipal corporations.

Despite its significance, property tax collections have remained considerably below potential, with substantial variations observed across cities and states. The High-Powered Expert Committee (HPEC) noted that in 2006-07, property tax revenues in different states in India were very low ranging from 0.16 to 0.24 percent of GDP as compared to around 0.60 percent of GDP in many developing countries (HPEC, 2011; Mathur et al., 2009). The 15th Finance Commission highlighted that international experience points to property taxation as one of the best tax options for local governments. Yet, by global standards, property tax

revenues in Indian cities are only a fraction of the developing-country average of about 0.7 percent of GDP (FC-XV, 2020).

In addition to property tax, revenues from own non-taxes of municipal corporations constitutes a significant part of their overall resources. Own non-tax revenue comprises of rental income, fees and user charges, fines and penalties, sale and hire charges, income from interest and investment and other miscellaneous sources. Own tax and non-tax revenues together constitute the own source revenues of municipal corporations/ULBs. A study by Gupta et al. (2025) draws attention towards the underperformance of MCs with respect to collection of revenues from both own tax and own non-tax sources.

The motivation for this study arises from the need to identify the specific factors that determine municipal revenue generation, particularly property tax, and to understand whether these factors operate uniformly across municipal corporations of different sizes and governance capacity. A critical distinction in this analysis concerns the data sources employed. The existing studies on municipal finance in India (Mohanty et al, 2007; Reserve Bank of India, 2022, 2024 to name a few) mostly use ULB budget data, which are unaudited and do not reflect actual fiscal performance. The study by Subalakshmi and Raghunathan (undated), note that municipal budgets in India are primarily cash-based and frequently diverge significantly from audited financial statements. This present study addresses this limitation by using audited financial statements (AFS) of municipal corporations, which provide a more reliable basis for analysis and reflect actual revenues collected and expenditures incurred rather than the estimates presented in the budget.

The study uses data from audited financial statements of municipal corporations for the financial years 2019-20, 2020-21, and 2021-22. The dataset covers 183 municipal corporations across 22 states for which complete data was available for all three years of the study period.[1] State-wise distribution of 183 municipal corporations is presented in table 1.

Table 1: State-wise Number of Municipal Corporations

State	No. of MCs	MCs considered
Andhra Pradesh	17	12
Arunachal Pradesh	1	0
Assam	1	1
Bihar	19	11
Chhattisgarh	14	13
Goa	1	0
Gujarat	8	6
Haryana	11	2
Himachal Pradesh	5	2
Jharkhand	10	9
Karnataka	11	10

[1] Meghalaya and Nagaland do not have any MC. The audited financial statements of MCs in four states namely, Arunachal Pradesh, Goa, Manipur, and Sikkim were not available for the years 2019–20, 2020–21 and 2021–22.

State	No. of MCs	MCs considered
Kerala	6	5
Madhya Pradesh	16	16
Maharashtra	28	20
Manipur	1	0
Mizoram	1	1
Odisha	5	5
Punjab	13	10
Rajasthan	10	2
Sikkim	1	0
Tamil Nadu	21	14
Telangana	13	11
Tripura	1	1
Uttar Pradesh	17	17
Uttarakhand	8	8
West Bengal	7	7

The paper explores the following research questions:

1) What does the recent financial data reveal about the level and composition of municipal revenues in India with particular focus on property tax? Specifically, it examines whether property tax, own non-tax revenue and overall own source revenues differ across municipal corporations classified by size (million-plus versus non-million-plus cities), municipal corporations that are part of Smart City programme versus other municipal corporations, financial position and credit rating etc.?

2) To what extent the differences in property tax performance are associated with city characteristics such as population, and other indicators like level of capital expenditure, intergovernmental transfers and the choice of valuation method used for property tax? In particular, it examines whether higher capital spending leads to better property tax outcomes, and do corporations using more modern valuation systems perform better than those that continue with the annual rental value method?

3) How do these factors compare when explaining own non-tax revenue and total own source revenue, and is there evidence which demonstrates that better governed cities raise more resources from multiple revenue streams?

The rest of the paper is organized as follows. Section 2 uses audited financial statements of 183 municipal corporations across 22 states for 2019–20 to 2021–22 for an in-depth descriptive analysis. It presents patterns in property tax and compares outcomes across different groups of cities, including million-plus versus non–million-plus cities, Smart Cities versus other cities, and investment-grade versus non–investment-grade municipal corporations. It also provides a preliminary look at the relationship between property tax and capital expenditure. The relationship between valuation methods used for property

taxation and property tax collection is also explored. Section 3 presents multivariate cross-sectional regression analysis on the determinants of property and municipal revenues Section 4 summarises the main findings and presents their implications for municipal reforms.

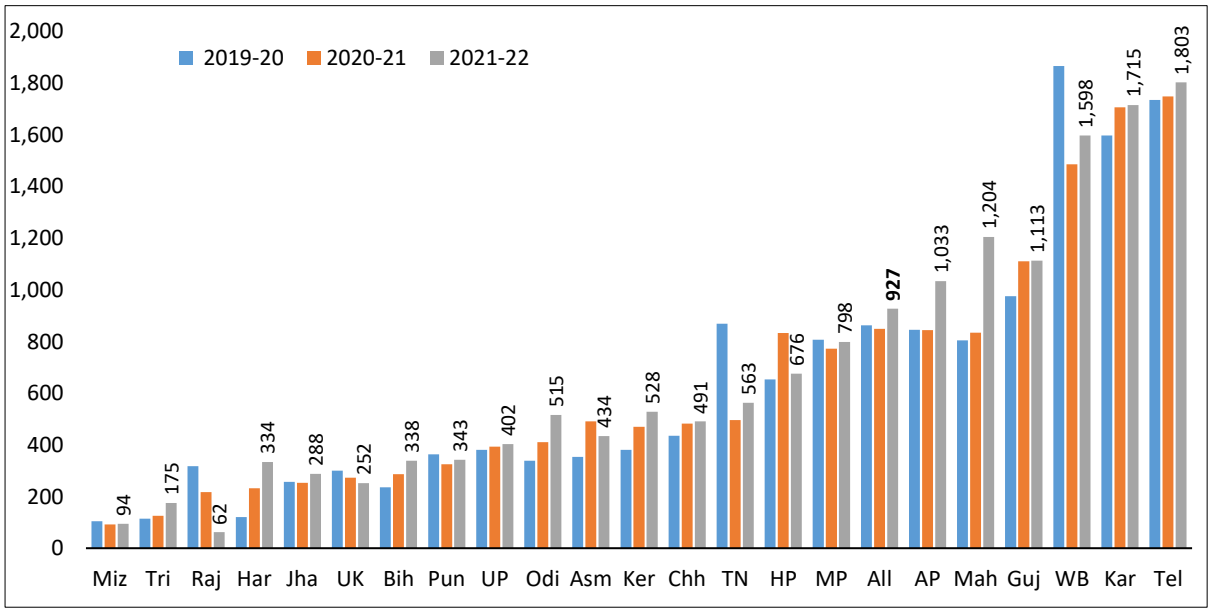
2. Descriptive Analysis

2.1 State of Property Tax Collections

Property tax constitutes the primary source of own tax revenues of Municipal Corporations/ULBs in India. In 2021-22, the total property tax collections across 183 municipal corporations amounted to Rs. 15,359 crore. Its share in the national GDP was just around 0.07 percent. Its share in GSDP aggregated across 22 states that are included in the analysis was also 0.07 percent. Between 2019-20 and 2021-22 property tax grew at a compound annual growth rate of 5.6 percent between 2019-20 and 2021-22.

Expressed in per capita terms, property tax collections in 2021-22 stood at Rs. 927 on average. However, there are considerable variations across states with some states collecting more than four times the per capita revenue of others. State-wise per capita property tax collections during 2019-20 to 2021-22 are presented in Fig-1. Sixteen out of 22 states that are included in the analysis show an increase in per capita property tax revenue between 2019-20 and 2021-22, while sharp decline is observed in some states - Rajasthan (-80.56 percent), Tamil Nadu (-35.26 percent), Uttarakhand (-16.17 percent), and West Bengal (-14.41 percent).

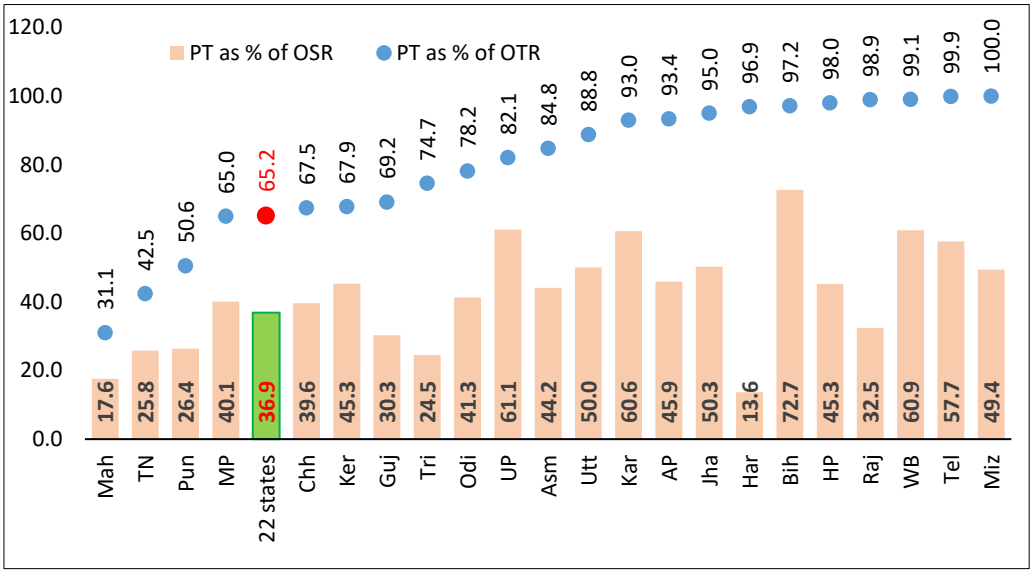
Figure 1: State-wise per capita property tax revenue (Rs.)



Source: Audited financial statements of municipal corporations and authors' calculations.

The heavy dependence of municipal corporations on property tax is apparent from its share in the own tax revenue. On average, property tax accounts for approximately 65 percent of own-tax revenue across the sample, though there are considerable variations across states (Fig-2). Maharashtra and Tamil Nadu are the only two states where property tax accounts for less than 50 percent of municipal own-tax revenue, whereas in several other states it constitutes over 90 percent of own-tax revenue. Low share of property tax in these two states could be due to a greater number of taxes being collected by municipal corporations and the overall revenue generation from own-taxes, other than property tax is relatively high.

Figure 2: Property Tax as percent of Own Tax & Own Source Revenue (3-year average 2019-20 - 2021-22)



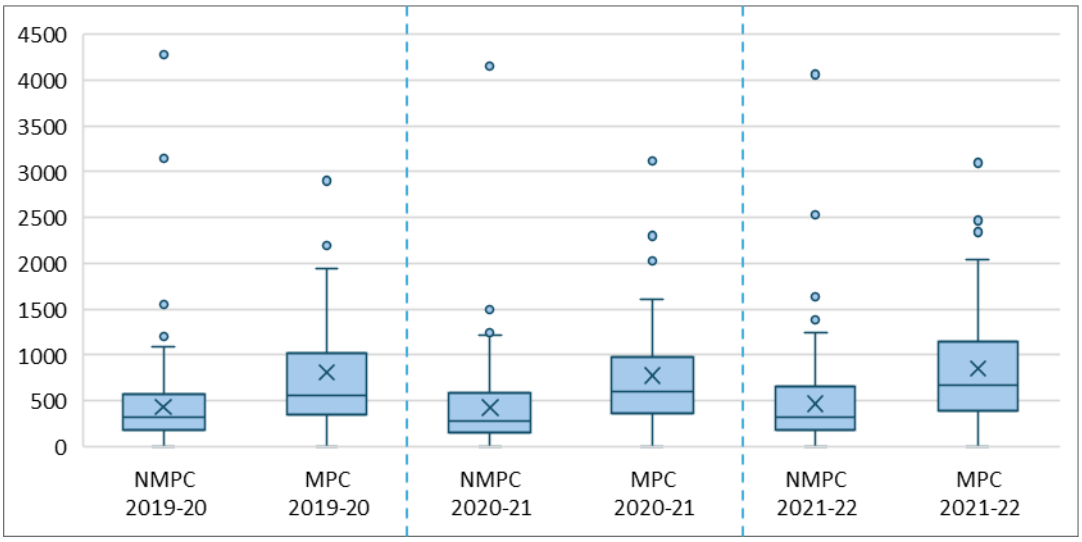
Source: Audited financial statements of municipal corporations and authors' calculations.

On average, property tax account for about 37 percent of own revenues of municipal corporations in India (Fig-2). In 13 out of the 22 states considered in the analysis, property tax accounted for more than 40 percent of own source revenue indicating dependence of municipal corporations on property tax for their overall resource requirements.

2.2 Comparative Analysis by Population Category

Property tax collections aggregated across MPCs amount to approximately Rs. 12,238 crore, which is almost six times the collections in NMPCs. Expressed in per capita terms we see per capita property tax collection in million plus cities, on average, is considerably higher than that in non-million plus cities (Fig-3) in each of the three years 2019-20, 2020-21 and 2021-22.

Figure 3: Per Capita Property Tax Revenue (Rs.) - 2019-20 to 2021-22



Source: Audited financial statements of municipal corporations and authors' calculations.

The relationship between city size (in population terms) and per capita property tax revenues exhibits a positive relation. In other words, per capita property tax collection increases as the size of the corporation increases. This can be attributed to what is called the "agglomeration effect" where in larger population as also greater economic activity in relatively bigger cities results in higher per capita property tax collection.

Comparing property tax revenues as a percentage of different revenue categories across MPCs and NMPCs we find that property tax accounts for a relatively smaller share of own tax revenues in MPCs as compared to NMPCs but a higher share of own and total revenues as compared to non-million-plus cities (Table 2). In other words, MPC not only raise more revenues from property tax but also raise more resources from other taxes relative to NMPCs. Further NMPCs dependence on own non-taxes and transfers is relatively more than MPCs. This probably explains the relatively lower share of property tax revenue in their own and total revenues vis-à-vis NMPCs.

Table 2: Property Tax Revenue as Percentage of Different Revenue Categories (3-year average)

	MPC	NMPC
Property Tax as % of Own Tax Revenue	64.57	68.86
Property Tax as % of Own Source Revenue	37.62	32.73
Property Tax as % of Total Revenue Receipts	22.18	13.94

Source: Audited financial statements of municipal corporations and authors' calculations.

2.3 Property Tax and Capital Expenditure

Before examining the relationship between capital expenditure and property tax performance of municipal corporations, we analyse the capital expenditure numbers across different categories of municipal corporation corporations and check if there is any statistically significant difference in capital expenditure across different categories (Table

3). For this we conduct simple t-test with the null hypothesis that the mean of three-year per capita capital expenditure is same across the two categories of corporation (the alternative hypothesis being that the two means are not equal/same). The p-values indicate no significant differences in three-year per capita capital expenditure across any of the municipal categories – Corporations that are part of Smart Cities vs. Other Corporations, Corporations that have revenue surplus vs those reporting revenue deficit, corporation with investment-grade rating vs those having being rated as non-Investment-grade and million-plus corporations vs non-million-plus corporations.

Table 3: Three-Year Per Capita Capital Expenditure – T-test

Category	Group	Number of MCs	Mean (Rs.)	P-value
Smart Cities	Smart city	64	9,675.4	0.7057
	Other Corporation	107	8,680.5	
Financial Status	Corporations with Revenue Surplus	84	8,871.7	0.8890
	Corporations with Revenue Deficit	87	9,227.7	
Credit Rating	Credit ratings: Investment grade	83	8,200.9	0.4355
	Credit ratings: Non-investment grade	64	6,889.7	
Population	Million-plus cities	36	28,047.9	0.8063
	Non-million plus cities	135	26,328.3	

Source: Authors' calculations

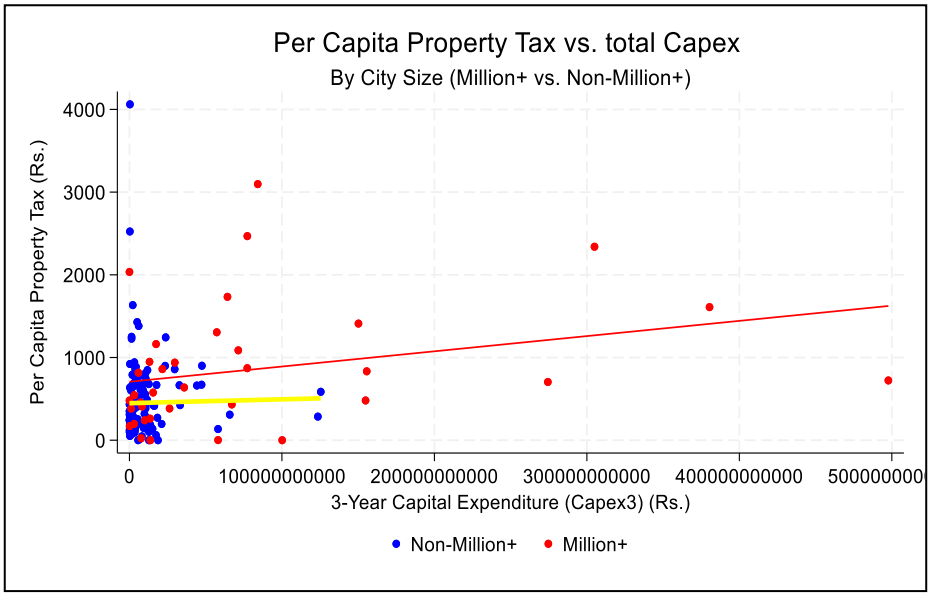
Capital expenditure and property tax are closely linked in the way municipal finances work. Capital expenditure reflects long-term investment by municipal corporations in infrastructure such as roads, water supply, sewerage, street lighting and public amenities. These investments improve municipal infrastructure and therefore, expected to boost service delivery. Better and newly created infrastructure also raise the value of properties in those areas of the city which experience improvement in infrastructure. Overtime, better infrastructure is expected to get capitalised into higher land and building values, which in turn should expand the base on which property tax is levied. In this sense, one expects a positive association between the two variables – capital expenditure and property tax collections.

It is in this context that we examine the relationship between per capita property tax collection and capital expenditure (both total and per capita). Infrastructure projects have long gestation period and requires continuous investment over a period of time. Further any impact of capital spending on property tax revenues is likely to appear with a lag since it takes time for new investments to translate into higher collections, if at all. For this reason, for capital investment, we consider last three years capital expenditure (i.e., capital expenditure for the years 2019-20 to 2021-22 – both per capita and total capital expenditure) and examine its relation with per capita property tax. More specifically we examine whether high capital expenditure (per capita or total) results in higher per capita

property tax collections.

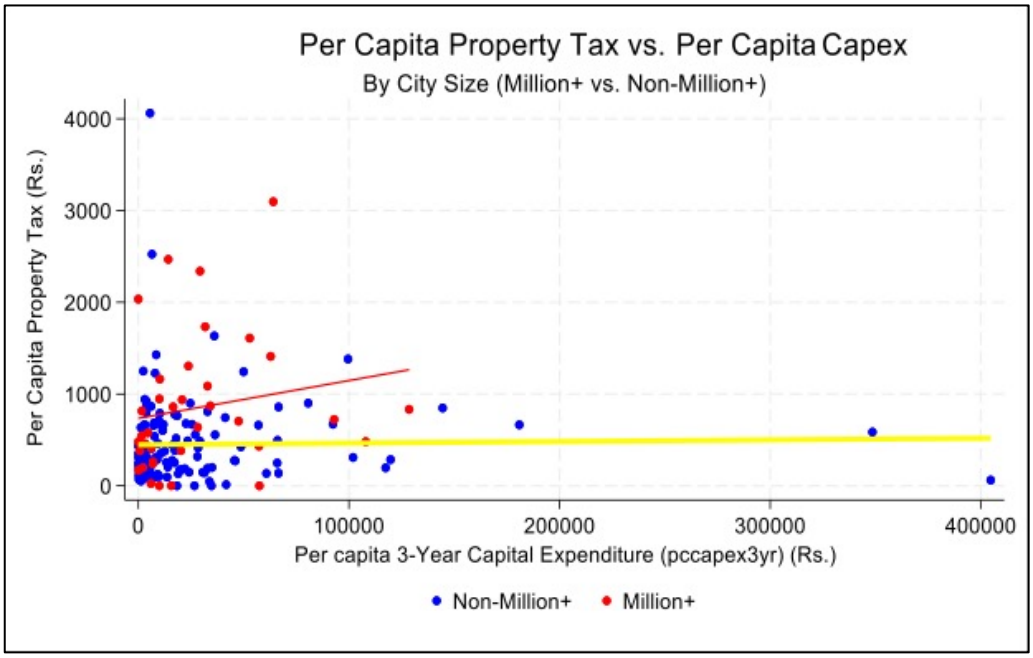
We have used four scatter plots to depict the relationship between property tax and capital expenditure in municipal corporations. On the vertical axis we plot per capita property tax while three-year total or per capita capital expenditure is on the horizontal axis. The first two scatter plots (Figs-4 and 5) relate to per capita property tax revenue to three-year total and per capita capital expenditure for million-plus and non-million-plus cities.

Fig-4: Relation between Per capita Property tax and 3-year Total Capex (MPC Vs NMPC)



Source: Authors' calculations

Fig-5: Relation between Per capita Property tax and 3-yr per capita Capex (MPC Vs NMPC)



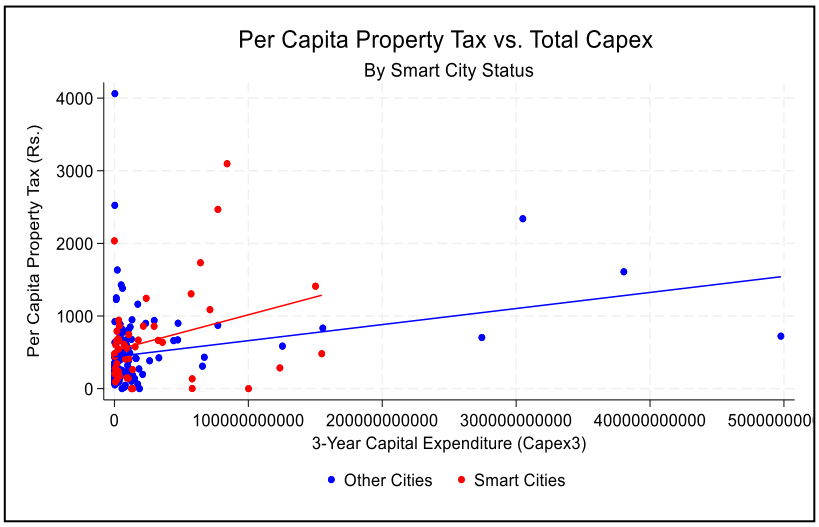
Source: Authors' calculations

The slopes of the two fitted lines in Fig-4 have mild positive slope showing a very marginal

increase in per capita property tax revenue with increase in total capital expenditure. In Fig-5 the fitted line for NMPCs is flat. From the two graphs one doesn't observe any systematic relation between per capita property tax and capital expenditure. However, per capita property tax is in general higher for MPCs as compared to NMPCs.

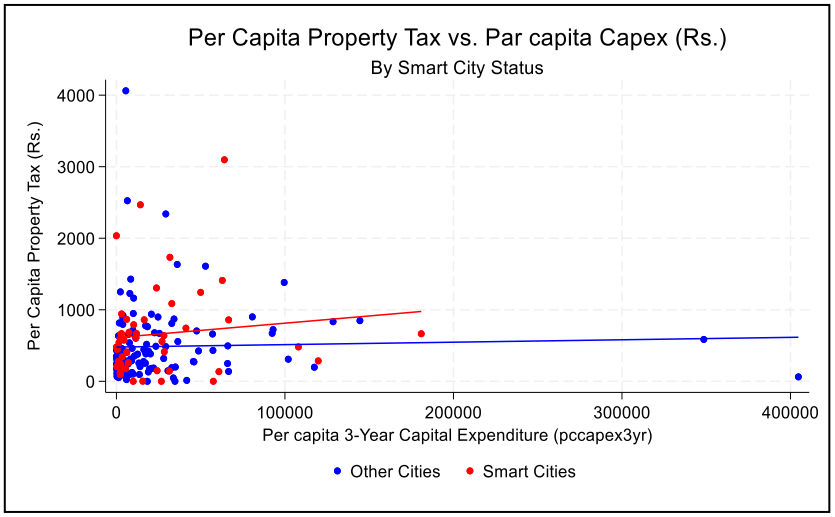
Figs-6 and 7 present the same relationship between property tax and capital expenditure but here the municipal corporations are categorized into those that are part of smart cities programme and other corporations/cities.

Fig-6: Relation between Per capita Property tax and 3-yr Total Capex (Smart cities Vs others)



Source: Authors' calculations

Fig-7: Relation between Per capita Property tax & 3-yr Per capita Capex (Smart cities Vs others)



Source: Authors' calculations

In municipal corporation that are part of Smart Cities programme there is positive stronger association between per capita property tax and capital expenditures, but even within this group higher capital expenditure does not consistently translate into higher per capita property tax.

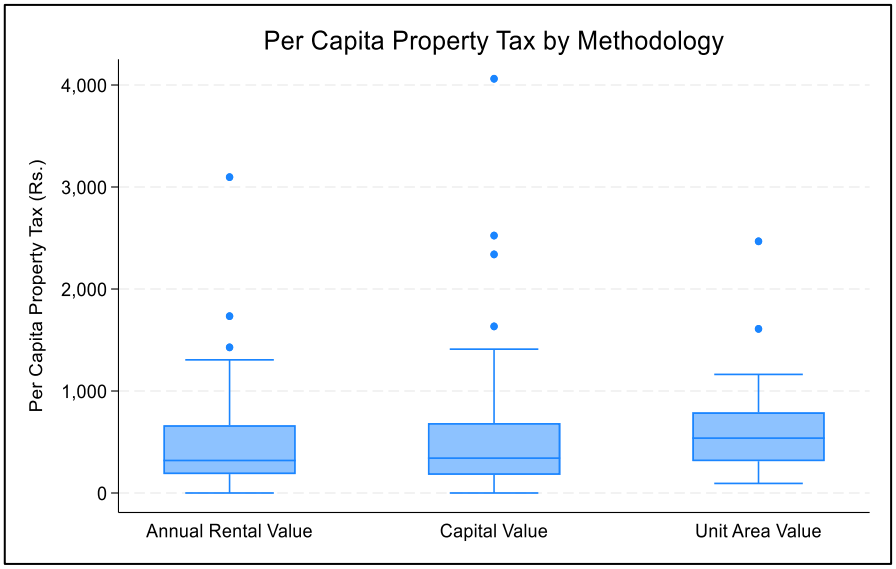
Overall, the scatter plots indicate that any association between capital expenditure and property tax revenue is, at best, weak. This motivates use for undertaking a more formal regression analysis examining the determinant of property tax revenues. This is presented in Section 3.

2.4 Property Tax and Valuation Method

Municipal corporations/ULBs in India broadly use three approaches to value properties for taxation – Annual Rental Value method, Unit Area Value method and Capital Value method. Under the Annual Rental Value (ARV) method, the tax base is the notional yearly rent the property could fetch. In the Unit Area Value (UAV) method, unit area of properties is valued based on various benchmarks such as age, location, usage, structure, construction type etc. The Capital Value (CV) method, in contrast, links the tax base to an estimate of the property's market value.

Of the three methods the CV method is conventionally considered to be the best method of valuation (Slack and Bird, 2015). Many countries have moved towards CV method for better exploitation of property tax as a source of revenue for local bodies. Figure 8 illustrates that on average, per capita property tax is higher in municipal corporations which have adopted UAV or CV methods of property valuation as compared to those that are still using ARV method.

Figure 8: Per Capita Property Tax by Valuation Method

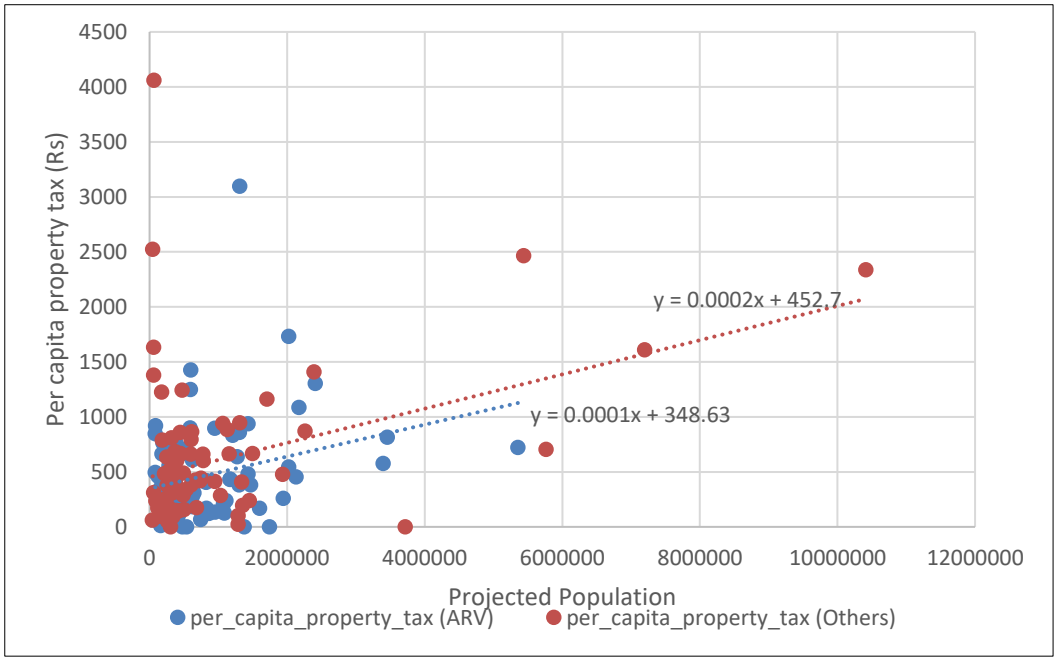


Source: Authors' calculations

Even when one observes the relationship between per capita property tax and the population, the scatter plot in Fig-9 reveals that for the same population level, per capita property tax is lower in municipal corporations which use ARV method as compared to those which use CV or UAV methods. However, per capita property tax collection

increases with the population of the city whether one is utilising the ARV or UAV or CV method of valuation. We analyse the relationship between per capita property tax revenue and the property valuation method employed in greater depth in Section 3. We undertake a multi variate regression analysis to ascertain the relationship between per capita property tax and valuation method.

Fig-9: Per capita property tax and population (ARV versus Other methods)



Source: Authors' calculations

2.5 Property tax and Smart Cities

The Smart Cities Mission is a centrally-sponsored scheme focused on strengthening infrastructure, adopting technology, and improving governance in urban local bodies. Comparing cities that are part of the mission and those that are not, provides insights into the impact of enhanced governance initiatives and capital investments on revenue generation from property tax. Table 4 presents the results of t-tests comparing corporation that are Smart Cities with other city corporations across key financial indicators.

Table 4: Comparative Statistics: Smart Cities vs. Other Cities (Mean Values)

Variable	Smart Cities	Other Cities	P-value
Number of corporations	64	107	
Per capita property tax (Rs)	677.67	451.36	0.0114**
Per capita OSR (Rs)	2,121.42	1,365.52	0.0162**
Per capita ONTR (Rs)	1,006.06	753.81	0.1137
Per capita transfers (Rs)	2,192.92	1,739.65	0.0459**

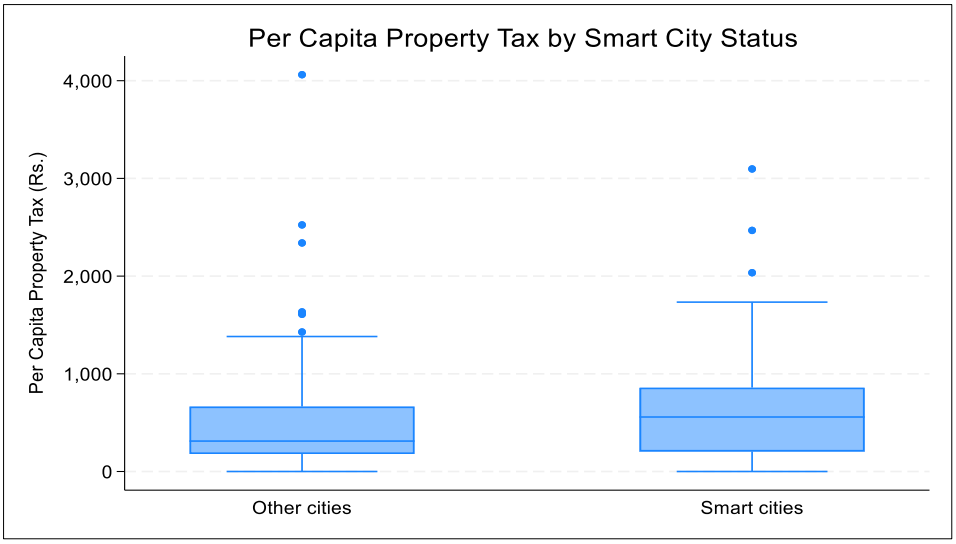
Note: ***, **, * indicate significance at $p < 0.01$, $p < 0.05$, $p < 0.10$ levels

Source: Authors' calculations

The results indicate that per capita property tax revenue in Smart Cities (Rs. 677.67) is

higher than in other cities (Rs. 451.36) and the results are statistically significant at the 5 percent level of significance. The significant difference in per capita property tax revenue of Smart Cities and other cities is also evident from Fig-10. Similarly, per capita OSR and per capita transfers are significantly higher for Smart Cities. Per capita own non-tax revenues on the other hand, though higher for corporation that are smart cities but the result is not significant.

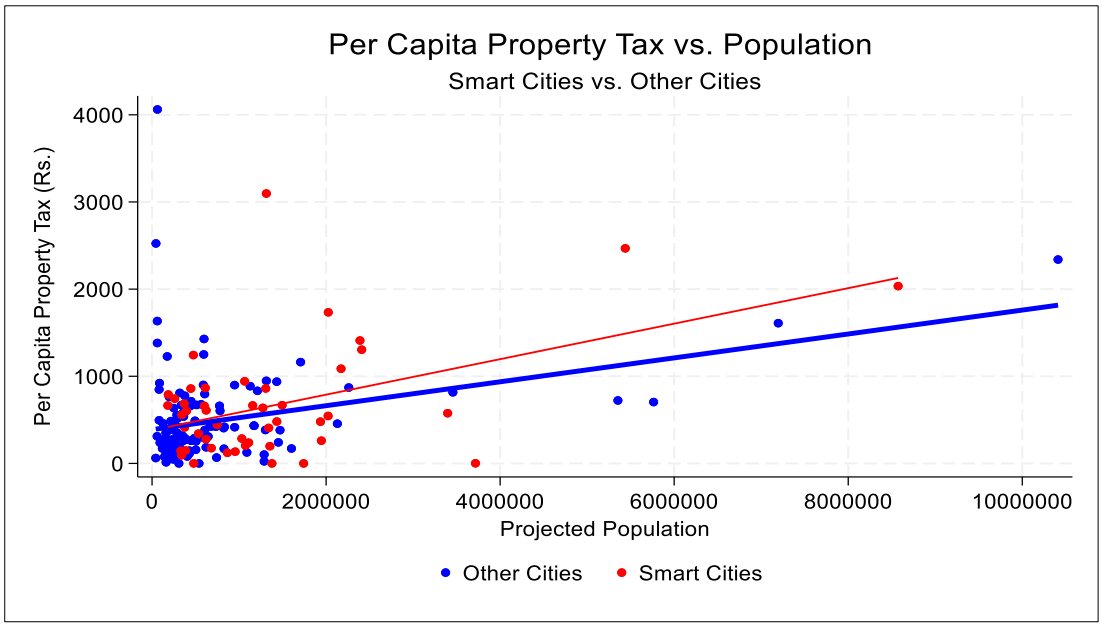
Fig-10: Per capita property tax (Smart Cities versus Other Cities)



Source: Authors' calculations

The scatter plot analysis further shows that a steeper positive relationship between per capita property tax and municipal population exists in Smart Cities compared to other cities, suggesting that governance improvements amplify the agglomeration effect.

Figure 11: Per capita property tax and population (Smart Cities versus Other Cities)



Source: Authors' calculations

2.6 Property tax and Credit Rating

Credit rating provides an external assessment of overall municipal financial health, governance quality among others. Comparing municipal corporations with investment-grade status (BBB- and above) versus those with non-investment-grade ratings reveals substantial differences in revenue generation. Table 5 presents comparative statistics by credit rating category.

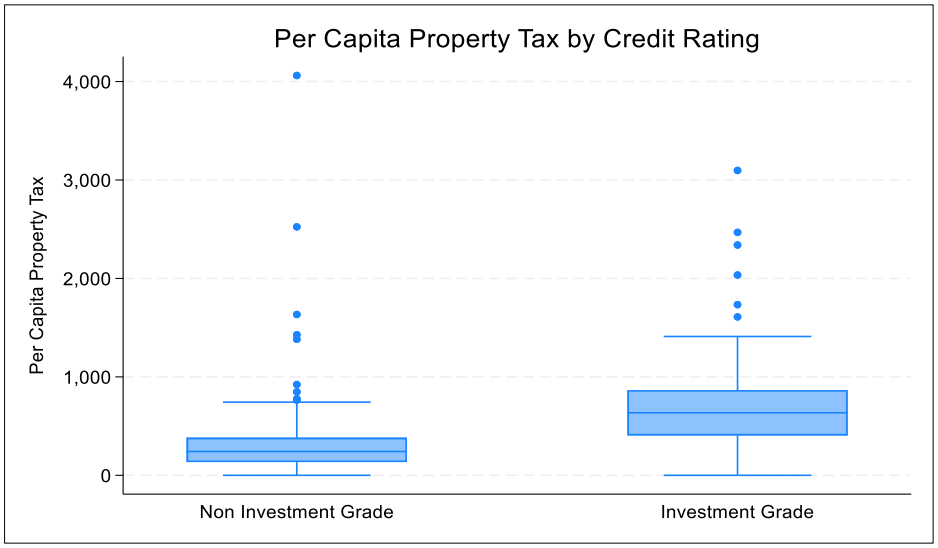
Table 5: Comparative Statistics: Investment-Grade vs. Non-Investment-Grade Rated Corporations (Mean Values)

Variable	Investment Grade	Non-Investment Grade	P-value
Observations	83	64	
Per capita property tax (Rs)	702.6	269.6	0.0000***
Per capita OSR (Rs)	2,164.7	868.4	0.0000***
Per capita ONTR (Rs)	1,049.7	457.9	0.0000***
Per capita transfers (Rs)	2,143.3	1,709.2	0.0598*

Note: ***, **, * indicate significance at p < 0.01, p < 0.05, p < 0.10 levels
Source: Authors' calculations

The differences are striking and highly significant across nearly all revenue categories. Cities with investment-grade credit ratings show higher per capita property tax revenues (Rs. 702.6) compared to those with non-investment grade rating (Rs. 269.6), a difference of more than 160 percent. This is also evident from Fig-12. Similar large differences are observed for per capita own source revenues and own non-tax revenues across the two categories and the results are significant.

Fig-12: Per capita property tax (Investment-Grade vs. Non-Investment-Grade Rated Cities)

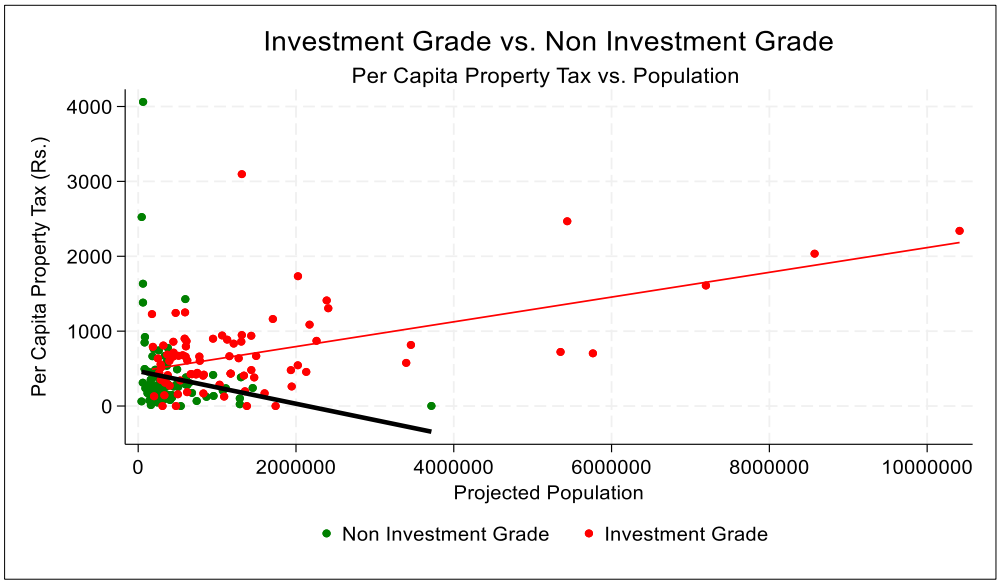


Source: Authors' calculations

Investment-grade rated municipalities demonstrate a positive relationship between property tax and population, whereas non-investment-grade rated municipalities show a

negative relationship as evident from scatter plot in presented in Fig-13, underscoring the critical role of governance quality in translating city size into revenue performance.

Fig-13: Per capita property tax and population (Investment-Grade versus Non-Investment-Grade Rated Cities)

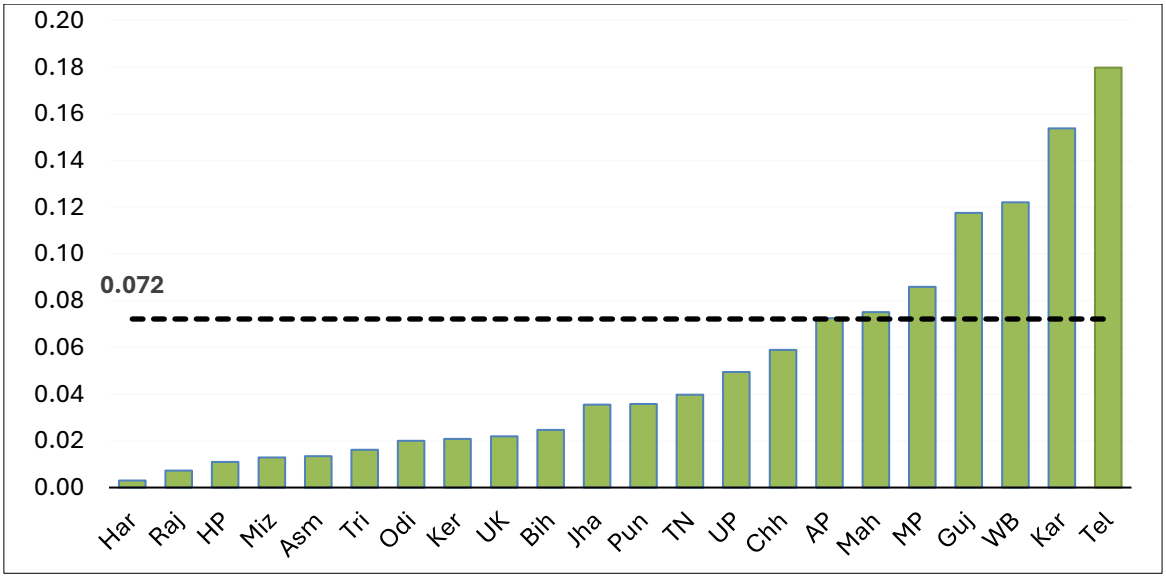


Source: Authors' calculations

2.7 Compliance with 15th Finance Commission Recommendation

The 15th Finance Commission recommended that ULBs achieve property tax growth greater than or equal to their respective state's most recent five-year average GSDP growth rate to receive grants from fiscal year 2023-24 onwards. Analysis of property tax revenue as percent of state GSDP reveals considerable inter-state variations, ranging from 0.003 percent in Haryana to 0.18 percent in Telangana, with an average of 0.07 percent across the 22 states (fig-14).

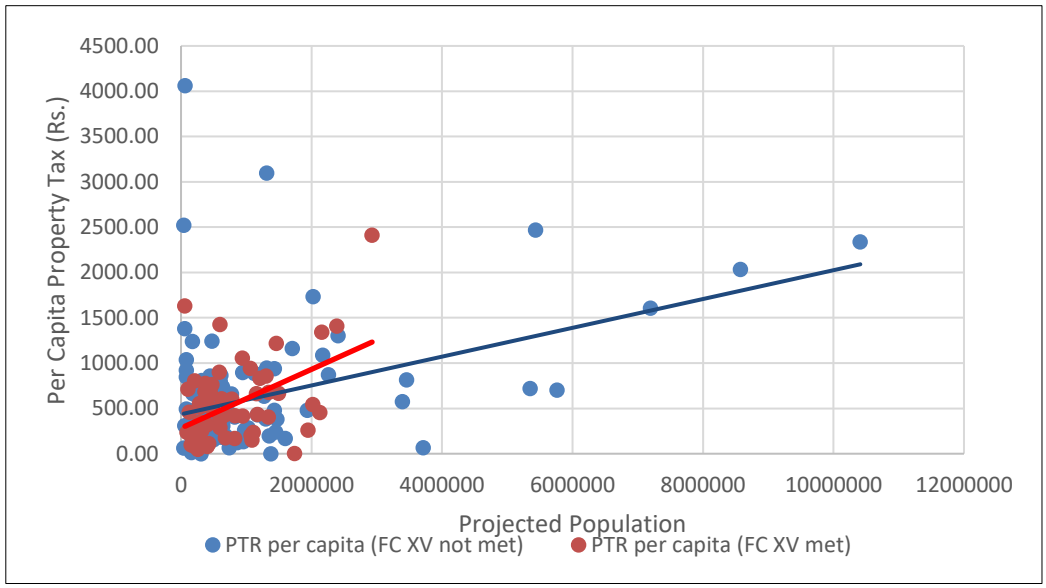
Fig-14: Property Tax as a Percentage of GSDP (Average of 3-years 2019-20 to 2021-22)



Source: Authors' calculations

It is observed that only 69 out of 183 municipal corporations meet this condition. Most of the larger municipal corporations fall in the group that does not fulfill the 15th Finance Commission's condition, implying that greater efforts are needed especially from larger municipal corporations to improve property tax revenue performance. The scatter plot of per capita property tax collection and population depicting two categories of corporations – those that meet the 15th FC condition and those that do not (Fig-15) shows that the gradient of the fitted line is higher for the former category. This mean that corporations that meet the FC conditions show a relatively larger increase in per capita property tax collection with the increase in size vis-à-vis the other category of corporations.

Fig-15: Per capita property tax and population (Based on 15th FC Condition)



Source: Authors' calculations

3. Econometric Analysis

3.1 Variables and Measurements

The dependent variables in the analysis are per capita property tax revenue (total property tax revenue divided by projected urban population), per capita own non-tax revenue (ONTR), and per capita own source revenue (OSR) combining both own tax and own non tax revenues. The independent variables include projected urban population capturing city size effects, a million-plus dummy identifying very large cities, three-year per capita capital expenditure measuring municipal investment intensity, per capita transfers representing intergovernmental transfers, a valuation dummy distinguishing annual rental value from capital/unit area value methods, and a credit rating dummy equal to 1 for investment-grade ratings (BBB- and above) and 0 otherwise.

3.2 Methodology

The paper employs ordinary least squares (OLS) regression analysis to examine the determinants of municipal revenues. Three sets of regression models are estimated, each examining different dependent variables. Different specifications are estimated to examine the robustness of relationships and to explore alternative functional forms. All variables – dependent or independent pertain to the fiscal year 2021-22 with the exception of capital expenditure for which three-year average (2019-20 to 2021-22) values were used.

3.3 Determinants of Per Capita Property Tax Revenue

The first set of regression models examines what determines per capita property tax revenue in municipalities. Six different sets of models are estimated. The results are presented in Table 6.

Across all the models where population is used as an independent variable (models 2, 3, 5, 6), we find a clear and positive relation between population and per capita property tax revenue. With the increase in city's population by 10,000, per capita property tax revenues increase by about Rs. 1.21 to 1.46, holding other factors constant. This is in sync with the ground reality. Bigger cities with more economic activity are expected to generate and collect more property tax per person.

In alternate set of models (models 1, 4) where instead of population we have used the MPC dummy (MPC dummy = 1 if MPC, = 0 otherwise). The MPC dummy shows a strong positive impact indicating MPCs collect around Rs. 213 to 215 more property tax per person as compared to NMPC and the results are statistically significant. However, in models 3 and 6 when both population and MPC dummy are included, the effect of MPC dummy loses significance. Our results indicate the per capita property tax collection is in general higher for MPC and it also increases with the size of the city.

Three-year average per capita capital expenditure does not show a significant effect on per capita property tax collection in any of the models. The estimates are small and inconsistent, suggesting that capital spending doesn't have a clear direct impact on property tax collections.

Per capita own non-tax revenue has a positive and strong association with per capita property tax in all the models. Cities that perform better in collecting non-tax revenue from services like water, sewerage, and parking also tend to have higher per capita property tax collections. This presents a positive cycle where good governance and effective revenue collection reinforce each other.

Table 6: Regression Results – Per Capita Property Tax Revenue

Independent Variables	Dependent variable: Per capita property tax					
	(1)	(2)	(3)	(4)	(5)	(6)
Projected Urban Population		0.000121***	0.000137***		0.000134***	0.000146***
		(2.31e-05)	(3.11e-05)		(2.29e-05)	(2.85e-05)
Million plus dummy = 1: MPC	215.1***		-77.98	213.2***		-66.21
	(77.46)		(99.03)	(80.37)		(91.86)
Per capita capex (2019-2021)	-0.000524	-0.000449	-0.000468	0.000206	-0.000509	-0.000522
	(0.00190)	(0.00180)	(0.00180)	(0.00323)	(0.00297)	(0.00297)
Per capita transfers	-0.0632***	-0.0698***	-0.0701***	-0.0200	-0.0250	-0.0261
	(0.0231)	(0.0219)	(0.0219)	(0.0253)	(0.0232)	(0.0233)
Per capita own non tax revenue	0.384***	0.383***	0.386***	0.242***	0.236***	0.240***
	(0.0328)	(0.0307)	(0.0311)	(0.0438)	(0.0398)	(0.0402)
Valuation dummy = 1: Annual Rental Value	-115.0*	-81.73	-74.38	-108.3*	-71.59	-64.21
	(62.48)	(59.13)	(59.93)	(62.75)	(57.33)	(58.33)
Credit rating dummy = 1: BBB- and above				210.1***	163.3**	172.8***
				(69.53)	(62.86)	(64.34)
Constant	347.3***	283.0***	278.9***	244.3***	192.5***	186.4***
	(60.25)	(58.88)	(59.17)	(68.61)	(63.41)	(64.09)
Observations	169	169	169	145	145	145
R-squared	0.509	0.560	0.561	0.420	0.511	0.513

Note: (1) t-statistics in parentheses;
(2) ***, **, and * denote significance at 1%, 5%, and 10% levels, respectively

Per capita transfers are negatively related to property tax revenue and the effect is statistically significant (Models 1, 2, 3). This means that higher transfers go along with lower property tax collections per person. Such a result suggests that transfers may reduce the local government's drive to collect taxes, indicating a need for incentive compatible transfer policies that encourage local revenue efforts.

We use a dummy of valuation method (valuation dummy = 1 for annual rental value method and 0 for other valuation methods) to examine its impact on per capita property tax collection. We expect a negative sign (i.e., inverse relation) for the coefficient implying that as one shifts to either UAV or CV method from ARV, there will be an increase in per capita property tax collection. We see that the estimates show an inverse relation between per capita property tax collection and valuation dummy as one would have expected and the results are significant in two models (models 1, 4). The results indicate improvement in property tax collection as one shift from ARV method of valuation to either UAV or CV method.

Finally, cities with an investment-grade credit rating (i.e., BBB- and above) collect significantly more property tax revenue per person suggesting good financial management and governance help cities raise more property tax.

The findings indicate that factors that impact per capita property tax collections include city size (population), governance quality, own non-tax revenue efforts, transfers, and valuation method used.

3.4 Determinants of Per Capita Own Non-Tax Revenue

In the second set of regression models, we examine the determinants of per capita own non-tax revenue (ONTR), which includes rental income, fees and user charges, penalties and fines, interest and investment income and other miscellaneous incomes. The estimation results are presented in Table 7.

Per capita ONTR shows a negative relationship with municipal population, though the magnitude is small. The result is significant in only one specification (model 3).

Unlike in case of property tax, three-year per capita capital expenditure shows a positive and statistically significant relationship with per capita ONTR, with coefficients ranging between 0.0163 – 0.0169. This indicates that an additional rupee of per capita capital expenditure results in an increase in per capita non-tax revenue by about 1.6 to 1.7 paise. This relationship is robust across all specifications and significant at the 1 percent level. The positive relationship likely reflects that municipalities with higher capital expenditure are making investments in improving service infrastructure such as water supply, sewerage systems, and sanitation facilities, which is likely to improve service delivery/provisioning and lead to better revenue generation by means of fees & user-charges.

Per capita transfers also show a strong positive relationship with per capita ONTR, with a

coefficient of about 0.23. Each rupee of additional per capita transfer is associated with approximately 23 paise additional per capita ONTR generation. This suggests that higher transfers enable municipalities to maintain and operate services effectively, thereby improving service quality and making residents more willing to pay user charges and fees. This complementary relationship contradicts simplistic narratives about transfer-induced moral hazard and instead points toward the importance of adequate operational resources for revenue generation.

Table 7: Regression Results – Per Capita Own Non-Tax Revenue

Independent variables	Dependent variable: Per capita own non tax revenue		
	(1)	(2)	(3)
Projected Urban Population		-5.84e-05	-0.000103*
		(4.50e-05)	(5.31e-05)
Million plus dummy = 1, MPC	87.59		262.1
	(142.2)		(167.1)
Per capita capex (2019-2021)	0.0167***	0.0169***	0.0163***
	(0.00540)	(0.00537)	(0.00536)
Per capita transfers	0.229***	0.227***	0.225***
	(0.0395)	(0.0393)	(0.0392)
Per Capita Property tax	0.735***	0.852***	0.858***
	(0.129)	(0.144)	(0.143)
Credit rating dummy = 1, BBB- & above	122.5	161.9	118.6
	(124.2)	(120.5)	(123.0)
Constant	-250.5**	-251.0**	-237.9**
	(110.4)	(109.8)	(109.6)
Observations	147	147	147
R-squared	0.485	0.490	0.499

Note: (1) t-statistics in parentheses;
(2) ***, **, and * denote significance at 1%, 5%, and 10% levels, respectively

Per capita property tax also shows a positive relationship with per capita ONTR, reflecting a virtuous cycle whereby municipalities with better governance generate higher revenues across multiple sources.

The credit rating dummy coefficient is positive but not statistically significant in most specifications.

3.5 Determinants of Per Capita Own Source Revenue

The third set of models examine determinants of per capita own source revenue (OSR), which combines both own-tax revenue and own non-tax revenue. The estimation results are presented in Table 8.

The analysis of determinants of per capita OSR combines the effects observed in the

estimation of per capita property tax and per capita ONTR models. Per capita OSR shows a positive and statistically significant relationship with municipal population and MPC dummy implying per capita OSR is higher for MPC in general and increases with the increase in city population. The MPC dummy shows a large and significant positive effect on per capita OSR indicating that million-plus cities (or MPCs) generate substantially higher per capita own-source revenues, a finding that reflects both their better developed revenue base and institutional capacity.

Table 8: Regression Results – Per Capita Own Source Revenue

Independent variables	Dependent variable: Per capita own non tax revenue		
	(1)	(2)	(3)
Projected Urban Population	0.000258**	0.000122	
	(0.000100)	(0.000123)	
Million plus dummy = 1, MPC		810.5*	1,062***
		(430.7)	(348.4)
Per capita capex (2019-2021)	0.0416***	0.0398***	0.0398***
	(0.0138)	(0.0137)	(0.0137)
Per capita transfers	0.336***	0.330***	0.329***
	(0.101)	(0.100)	(0.100)
Credit rating dummy = 1, BBB- & above	831.3***	701.2**	741.4**
	(297.5)	(302.9)	(300.2)
Constant	-101.2	-58.94	-18.47
	(280.5)	(278.9)	(275.9)
Observations	147	147	147
R-squared	0.273	0.291	0.286

Note: (1) t-statistics in parentheses;
(2) ***, **, and * denote significance at 1%, 5%, and 10% levels, respectively

Per capita capital expenditure shows a strong positive relationship with OSR which is statistically significant. This reflects the strong positive relationship observed in the ONTR model, as capital expenditure enables improved and better service infrastructure.

Per capita transfers show a strong positive relationship with OSR, with coefficients around 0.33. Higher transfers enable municipalities to maintain services and infrastructure, which supports their capacity to collect both tax and non-tax revenues. This can be attributed to the fact that higher transfers enable a municipality to spend more on operations and maintenance and provide better services, which in turn induces citizens to pay user charges, fees, and other obligations.

The credit rating dummy is significant across all specifications, with coefficients ranging from 701 to 831. This indicates that investment-grade rated municipalities collect approximately Rs. 700-830 more per capita in own-source revenue compared to non-investment-grade municipalities, a substantial premium reflecting governance quality and institutional

effectiveness.

4. Conclusion

The paper examines the determinants of municipal revenues in Indian cities, with particular emphasis on property tax collections. Drawing on audited financial statements of 183 municipal corporations spread across 22 states for 2019-20 to 2021-22, the study provides empirical insights into the factors influencing municipal revenue generation capacity.

The descriptive analysis reveals that property tax, despite its importance as the primary own-tax revenue source, remains substantially below potential levels. Per capita property tax collections average Rs. 927, representing only 0.07 percent of GDP. Significant inter-municipal and inter-state variations exist, with some municipalities collecting more than four times the per capita revenue of others. Only 69 out of 183 municipalities meet the 15th Finance Commission's property tax growth criterion, indicating widespread underperformance. The analysis also reveals substantial differences in revenue performance across municipalities categorized by size, governance quality proxied by credit ratings, and participation in centrally-sponsored schemes such as the Smart Cities Mission.

The econometric analysis identifies several key determinants of municipal revenue generation. City size, measured by population, shows a significant positive relationship with per capita property tax revenue, consistent with the agglomeration effects. Governance quality, proxied by credit ratings, emerges as one of the strongest determinants of municipal revenues. Municipalities with investment-grade credit ratings collect significantly higher per capita property tax and own-source revenues, highlighting the importance of institutional capacity and financial management in revenue collection. Capital expenditure is positively related to own non-tax revenues and overall own-source revenues, suggesting that investments in service infrastructure enable municipalities to collect higher user charges and fees.

Intergovernmental transfers show a complex relationship with local revenues. While transfers support service delivery and may indirectly support revenue collection through improved service quality, they show weak negative relationships with property tax specifically, suggesting that the design of transfer mechanisms requires careful attention to incentive-compatibility. Valuation methodology for property tax matters, with capital value and unit area value methods outperforming the annual rental value method. This finding has direct implications for property tax reform efforts.

The analysis reveals a virtuous cycle whereby municipalities with better governance and higher own non-tax revenues also collect higher property tax revenues. This suggests that revenue generation is influenced by overall institutional quality and governance performance rather than specific policies for individual revenue sources. The findings have several policy implications. The significant role of governance quality in revenue collection suggests that institutional strengthening should be a priority for municipal fiscal reform. The large

differences in revenue performance across similarly-sized municipalities indicate that revenue potential is not fully determined by demographic or economic factors but depends critically on management and administration. The positive relationship between capital expenditure and non- tax revenues suggests that investments in service infrastructure can support revenue generation through improved user charge collection.

The paper contributes to the literature on municipal finance in India by providing empirical evidence on revenue determinants using audited financial data. However, several avenues remain for future research. The analysis could be extended to include all urban local bodies in India, not just municipal corporations. Incorporating additional variables such as district domestic product and nighttime lights data could provide richer measures of municipal economic activity. An econometric study specifically examining the determinants of property tax arrears would illuminate another important dimension of municipal revenue performance. Panel data analysis using variations over time within municipalities could provide additional insights into the dynamic processes underlying municipal revenue generation.

References

Finance Commission. (2019). Report of the Fifteenth Finance Commission, 2020–21. Government of India.

Finance Commission. (2021). Report of the Fifteenth Finance Commission, 2021–26. Government of India.

Gupta, M., Gupta, A., & Gupta, N. (2025). *A Deep Dive into the Finances of Municipal Corporations in India. Economic & Political Weekly, 60*(39), Special Articles.

Mathur, O. P., Thakur, D., Rajadhyaksha, N., & Bahl, R. (2009). Urban property tax potential in India. New Delhi: National Institute of Public Finance and Policy.

Mohanty, P. K., Misra, B. M., Goyal, R., & Jeromi, P. D. (2007). Municipal finance in India: An assessment. Development Research Group Study, 26.

National Municipal Accounting Manual. (2004). Ministry of Urban Development, Government of India.

Population Projections for India and States: 2011–2036. (2019). National Commission on Population.

Report on Indian Urban Infrastructure and Services. (2011). High Powered Expert Committee. Ministry of Urban Development.

Reserve Bank of India (2022) Report on Municipal Finances, RBI.

Reserve Bank of India (2024) Report on Municipal Finances, RBI.

Slack, E., & Bird, R. M. (2015). How to reform the property tax: lessons from around the world.

Institute on Municipal Finance and Governance.

Subalakshmi, K., & Raghunathan, U. Assessing the Financial Health of Indian Cities. National Institute of Urban Affairs.

Vaidya, C. (2009). Urban issues, reforms, and way forward in India. Department of Economic Affairs, Ministry of Finance.

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