

Do Financially Stronger Cities Grow Faster? How Difficult to Answer?

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Abstract

Indian cities are responsible for a large share of the country's economic activity, yet their municipal governments often have very limited financial resources of their own. This raises a simple but important question: do cities that are better able to raise their own revenue actually perform better economically? The question sounds straightforward, but answering it is difficult because richer and faster-growing cities naturally collect more property tax. In other words, high revenue may be a result of growth rather than a cause of it. This paper proposes a way to separate these two possibilities. It focuses on administrative reforms in municipal property taxation—especially GIS-based property mapping, changes in valuation systems, improved collection arrangements, and digital tax platforms. These reforms can increase a city's revenue-raising capacity without necessarily being caused by a contemporaneous increase in economic activity. Because different cities introduced such reforms at different times, the study proposes a staggered difference-in-differences approach to examine whether economic activity changes after reform. Because India does not regularly publish GDP for individual cities, the study will use night-time light intensity, built-up area, and newly registered firms as measures of local economic activity. It will also examine whether any effect works through greater municipal investment, improved access to borrowing, or better information about the city's physical and property base. The study is deliberately open to a positive, small, or even zero growth effect. If reforms increase revenue but do not increase economic activity, that would itself be an important policy finding.

Keywords: Municipal Finance; Own-Source Revenue; Property Tax; Fiscal Capacity; Urban Growth; India; Difference-In-Differences; Urban Governance

Introduction

When we think about why some cities prosper while others struggle, we usually talk about jobs, industries, roads, education, connectivity or investment. We talk much less about one basic question: does the city government have enough money, and enough control over that money, to do its job well?

This question matters greatly in India. Municipal governments are expected to provide and maintain roads, drainage, water supply, sanitation, street lighting, solid-waste management and other everyday services. They are also expected to support a growing urban economy. Yet their own financial resources remain small compared with those of state and central governments.

At first sight, the relationship between municipal revenue and economic growth appears obvious. A city with more economic activity has more valuable properties, more businesses and more paying users of municipal services. It therefore collects more revenue. But this creates a problem for research: if we observe that high-revenue cities are also high-growth cities, we cannot immediately say that revenue caused growth. The direction may be the other way around.

This paper therefore asks a narrower and more useful question: what happens when a city becomes better at raising its own revenue because its tax administration improves? If such a reform is followed by stronger economic activity, we have better evidence that fiscal capacity can help growth.

The Economic Survey 2025–26 gives this question particular policy relevance. It describes Indian cities as economically central but fiscally and institutionally constrained. It argues for stronger own-source revenue, improved property-tax administration, better municipal borrowing capacity and performance-linked transfers. The Survey therefore makes an important policy bet: stronger municipal finances can help Indian cities function better and, ultimately, support economic development.

The purpose of this research is not to assume that this policy bet is correct. It is to test it. That distinction is important. If stronger revenue does not translate into stronger economic performance, policymakers need to look elsewhere—perhaps at land-use regulation, fragmented institutions, planning capacity or the way public money is spent.

2. Why the Question Is Difficult

Municipal own-source revenue (OSR) mainly comes from property tax, user charges and other local levies. Property tax creates the biggest identification problem because the tax base is itself closely connected to prosperity.

Imagine two cities. City A has valuable buildings, busy markets and expanding commercial areas. City B has lower property values and fewer businesses. Even if their municipal administrations are equally efficient, City A will probably collect more property tax. If City A also grows faster, a simple statistical comparison will show a strong positive relationship between municipal revenue and growth. But that relationship tells us almost nothing about whether the extra revenue caused the growth.

Adding city fixed effects does not solve the entire problem. A city's permanent characteristics may be absorbed by fixed effects, but its changing tax base remains linked to changing economic activity. Simply using last year's revenue also does not solve the problem because a growing tax base is persistent.

The research therefore needs a source of variation in fiscal capacity that does not simply reflect changes in the local economy. Property-tax administration reforms provide a promising possibility.

3. Why Municipal Finance Matters in India

The scale of India's municipal finance problem is striking. The Reserve Bank of India's 2024 Report on Municipal Finances, covering 232 municipal corporations, places municipal corporation revenue receipts at about 0.6 per cent of GDP in 2023–24. Property tax was only about 0.12–0.15 per cent of GDP, compared with roughly 1.1 per cent in the OECD average cited in the literature.

The Economic Survey 2025–26 similarly emphasises that Indian municipalities depend heavily on transfers and have limited own-source revenue. For large cities, own-source revenue covers only around 30–40 per cent of expenditure, while the share is below 20 per cent in smaller cities. Municipal borrowing has increased, but remains small relative to the size of India's urban economy.

These figures do not mean that every municipal corporation is poorly managed. They do, however, suggest that local governments operate with a narrow fiscal base. A city may have major responsibilities but limited ability to raise and retain the resources needed to meet them.

The institutional roots of this problem go back to the way decentralisation developed after the 74th Constitutional Amendment. Urban local bodies received important responsibilities, but states retained substantial influence over tax rates and bases, borrowing, staffing and administrative arrangements. As a result, responsibility for urban outcomes is often divided between several levels of government. This makes

municipal finance more than an accounting issue. It is closely connected with the practical ability of cities to plan, invest and respond to local needs.

4. The Key Opportunity: Property-Tax Reform

The proposed study focuses on reforms that improve the administration of property tax. These include mapping properties through GIS, bringing previously unassessed properties into the register, changing valuation systems, improving collection arrangements and introducing digital assessment and payment systems. The attraction of these reforms is that they can increase revenue by improving the coverage and administration of the existing tax base. A GIS survey, for example, can identify buildings or plots that were missing from the municipal register. The reform can therefore raise revenue without the city becoming economically richer at the exact moment the reform is introduced.

Published case studies suggest that such reforms can have substantial effects. Pune's move to a capital-value system is reported to have increased property-tax revenue by about 29 per cent. In Visakhapatnam, GIS mapping covered hundreds of thousands of properties and property-tax revenue rose from about ₹77 crore in 2010–11 to ₹169 crore in 2013–14. Ranchi's collection outsourcing expanded the assessed base by about 55 per cent, while Raipur recorded a reported 68 per cent increase in revenue following GIS mapping, door-to-door surveys and drone-based property capture. These examples do not prove that municipal revenue causes economic growth. They only establish that administrative reforms can change a city's revenue-raising capacity. The proposed research takes the next step and asks whether the additional fiscal capacity is followed by measurable changes in economic activity.

5. Research Question and Objectives

The central research question is:

Do improvements in municipal own-source revenue capacity lead to better economic performance in Indian cities?

The study has five objectives:

1. To identify major, datable property-tax administration reforms adopted by Indian municipal corporations.
2. To estimate whether these reforms actually increase municipal own-source revenue.
3. To examine whether economic activity changes after the reforms.
4. To understand whether the effect, if any, operates through municipal investment, borrowing capacity or improved spatial information.
5. To assess whether the findings support the Economic Survey 2025–26 approach to performance-linked urban finance.

6. Conceptual Framework: How Could Revenue Affect Growth?

There are at least three plausible ways in which stronger municipal finances could influence a city's economy.

First is the expenditure channel. Additional revenue can finance roads, drainage, water networks, sanitation, street lighting and other infrastructure. Better local infrastructure can reduce the cost of doing business and make daily life easier for households. These effects are unlikely to appear immediately; they may build gradually as money is converted into useful public assets.

Second is the credibility or borrowing channel. A city with a stronger and more reliable revenue stream may be considered more creditworthy. It may find it easier to borrow or issue municipal bonds and therefore finance

projects that would be too large to fund from annual revenue alone. Under this mechanism, the economic effect may be larger than the direct increase in tax revenue.

Third is the information channel. A GIS-based property register is not merely a tax collection tool. It is a map and database of the city's physical assets. It can improve planning, help target services, support better land management and reduce uncertainty about properties. In this case, a reform could influence economic performance even if the additional revenue itself is modest.

These three channels matter because they lead to different policy conclusions. If growth comes mainly through infrastructure spending, cities need fiscal resources and spending capacity. If borrowing is the key mechanism, creditworthiness and municipal bond rules become more important. If the information channel dominates, investment in spatial data and property registers may be more valuable than simply rewarding higher tax collections.

7. Proposed Data and Measurement

The unit of analysis will be the municipal corporation. The target sample will draw from municipal corporations covered by the RBI's municipal finance reports, subject to the availability of standardised financial data, reform dates and compatible geographic boundaries.

The intended panel is approximately 2005–2024 where data permit. Financial data are less complete in the earlier years, while satellite-based outcome measures can provide a longer and more consistent series.

Economic performance cannot be measured with city GDP because India does not routinely publish a comparable city-level GDP series. The study therefore uses three complementary measures.

1. Night-time lights. Satellite measures of night-time light provide an indirect indicator of economic activity. The main measure will be the logarithm of total radiance within a fixed municipal boundary. Mean radiance and the share of area that is lit will be used as alternatives.

2. Built-up area. The Global Human Settlement Layer provides information on the physical expansion of built-up land. It is useful because it is conceptually different from night-time lights.

3. Firm activity. Newly registered companies and their paid-up capital, obtained from Ministry of Corporate Affairs data, provide a formal-sector indicator of business activity. Because a large part of India's urban economy remains informal, this measure will be treated as a complement rather than a replacement for satellite indicators.

Municipal boundaries create another measurement issue. If a corporation annexes a new area, both night-time lights and built-up area may rise simply because the boundary has become larger. The preferred strategy is therefore to hold the earliest available municipal boundary fixed and, as a robustness check, measure outcomes within a fixed-radius buffer around the city centre.

8. Treatment: Identifying Property-Tax Reforms

The main treatment variable is the year in which a municipality introduced a significant property-tax administration reform. Four broad categories will be recorded:

- Valuation-system reforms—for example, movement from annual rental value to capital value or unit-area value.
- GIS-based enumeration—systematic spatial mapping of properties and expansion of the property register.

- Collection outsourcing or administrative restructuring.
- Digital platform integration—online assessment, billing, payment and related administrative systems.

Documenting the timing of reforms is one of the most important parts of the project. The study will use published research, municipal documents, state government notifications, National Institute of Urban Affairs material, CSEP research and municipal annual reports. Each reform date will be assigned a confidence level because reforms are often announced first, piloted later and implemented gradually.

The study will therefore avoid pretending that every reform began on one perfectly precise day. The formal notification date will provide an intention-to-treat measure, while a separate analysis will be restricted to reforms whose timing can be established with greater confidence.

9. Empirical Strategy

The central empirical strategy is a staggered difference-in-differences design. The basic idea is intuitive: compare the economic path of cities before and after they introduce a reform with the path of cities that have not yet introduced the reform.

This is preferable to simply comparing high-revenue and low-revenue cities because it focuses on a change in administrative capacity rather than on the existing level of wealth.

The analysis will use an event-study framework. This allows the researcher to observe what happens in the years leading up to a reform and in the years following it. The pre-reform period is especially important. If treated cities were already accelerating before the tax reform, it would suggest that reform timing may be responding to growth rather than causing it.

Because reforms occur at different times and their effects may grow gradually, conventional two-way fixed-effects difference-in-differences can be misleading. The main analysis will therefore use heterogeneity-robust methods developed by Callaway and Sant'Anna, with Sun–Abraham and Borusyak–Jaravel–Spiess estimates as alternatives. Conventional two-way fixed-effects results will be shown only as a comparison, not treated automatically as the preferred estimate.

The models will include city fixed effects and state-by-year fixed effects. City fixed effects account for stable differences between cities, while state-by-year effects absorb state-level changes that may affect all cities in a state in a particular year. Standard errors will be clustered at the city level.

10. The First Test: Did the Reform Actually Raise Revenue?

Before asking whether a tax reform increased economic activity, the study must first establish that it actually increased municipal revenue. This is the first-stage test.

The expectation, based on the documented case studies, is that OSR should increase after reform, perhaps gradually over two to four years. If no meaningful revenue increase is found in the wider sample, then the reform events identified in published case studies may not represent the typical Indian municipality.

This first stage is therefore important in its own right. A weak first stage would not simply be an inconvenience; it would change the interpretation of the entire study.

11. Testing the Main Assumption

The credibility of the research depends on an important assumption: without the reform, treated and untreated cities would have followed reasonably similar economic paths.

Three threats deserve particular attention.

The first is anticipation. A city may introduce a property-tax reform precisely because officials know that the city is about to experience rapid growth. In that case, the reform is partly a response to growth. Pre-trend analysis and sensitivity tests will be used to examine this possibility.

The second is bundled government programmes. Property-tax reforms may arrive alongside large programmes such as JnNURM, AMRUT or the Smart Cities Mission. If a reform coincides with a major investment programme, the observed effect may reflect the entire package rather than tax administration alone. State-by-year effects, direct controls for Smart Cities participation, and analyses excluding cities with major overlapping interventions will be used to reduce this concern.

The third is the quality of local administration. A capable municipal commissioner may introduce better tax administration and also improve roads, planning and other services. In that case, it is difficult to separate the reform from the administrative capacity that produced it. The study therefore takes an honest position: the policy-relevant effect may be the effect of a successful reforming administration rather than a purely mechanical effect of extra tax revenue.

12. Separating the Three Possible Mechanisms

The study will go beyond the simple question of whether growth occurred. It will also ask why.

If the expenditure channel is important, cities where a larger share of additional revenue is devoted to capital expenditure should show stronger effects. If the credibility channel is important, effects should be concentrated among cities that subsequently borrow or issue municipal bonds. If the information channel is important, GIS-enumeration reforms should have larger effects than reforms that increase revenue without creating a detailed spatial property register.

The last comparison is particularly valuable. Suppose two reforms produce similar increases in property-tax revenue, but only the GIS reform is followed by stronger economic activity. That would suggest that the spatial information created by the reform—not merely the additional money—is part of the explanation.

13. The Municipal Finance Data Problem

A major strength of the proposed study is that it does not hide a serious data problem. India's municipal finance data are not equally available or equally standardised across states.

For 2022–23, the City Finance portal reports that the share of submitted financial statements converted into standardised comparable form was about 97 per cent in Karnataka, around 45–46 per cent in Maharashtra and Kerala, 13 per cent in Haryana and only 4 per cent in Chhattisgarh. Such differences are unlikely to be random. Better-administered states may also have faster-growing cities.

This creates a selection problem. If the analysis simply uses municipalities with complete financial data, it may end up studying the better-administered part of India and presenting the result as if it applied to all cities.

The proposed solution is important: the core reduced-form analysis can rely on reform dates and satellite outcomes and therefore does not require complete municipal accounting data. Financial data are most important for confirming the first stage and studying mechanisms. Results will also be presented separately for states with high and low data coverage.

In other words, the weakest financial data should not be allowed to determine whether the central research question can be studied at all.

14. Robustness and Falsification

A credible research paper should actively look for reasons why its preferred result might be wrong. Several checks are therefore planned.

- Repeat the analysis using different night-time-light measures and built-up area.
- Use the VIIRS-only period to avoid problems associated with combining different generations of satellite data.
- Repeat the analysis with alternative boundary definitions.
- Randomly reassign reform years across cities as a placebo exercise.
- Test a placebo outcome that should not respond to municipal fiscal reform, such as agricultural activity in the surrounding rural area.
- Allow for reform effects to begin before the formal adoption year because announcements can precede implementation.
- Exclude the COVID-19 years or model them separately because lockdowns affected night-time lights and mobility in unusual ways.
- Repeat the analysis using only high-confidence reform dates.
- Compare high-coverage and low-coverage states.
- Use sensitivity analysis to assess how large a violation of the parallel-trends assumption would have to be to overturn the conclusion.

15. Hypotheses

Hypothesis	Expected pattern	Reason
H1	Property-tax reform increases OSR.	Administrative reforms should improve coverage, assessment or collection.
H2	Economic activity increases after reform, possibly with a lag.	Revenue may take time to become infrastructure or unlock borrowing.
H3	No systematic pre-reform trend.	A necessary condition for the identification strategy.
H4	GIS reforms have larger effects than comparable non-GIS reforms.	Tests the information channel.
H5	Effects are stronger in cities that subsequently borrow.	Tests the credibility/borrowing channel.
H6	Effects are stronger where more revenue goes to capital expenditure.	Tests the infrastructure channel.

16. What Size of Effect Should We Expect?

The existing literature gives us a reasonable expectation for the first stage but not for the final growth effect. Published case studies report substantial increases in property-tax revenue following administrative reforms.

However, municipal revenue is small relative to the overall economy. The Economic Survey places municipal own-source revenue at about 0.6 per cent of GDP, while property tax is around 0.15 per cent of GDP.

This means that even a 30 per cent increase in property-tax revenue would represent only about 0.045 per cent of GDP in additional resources, before considering the share that actually reaches capital expenditure. A very large direct growth effect would therefore be difficult to explain through the extra rupees alone.

This simple calculation is useful because it prevents exaggerated claims. If the eventual reduced-form effect is substantial, the researcher should first investigate whether the reform also unlocked borrowing, improved planning, or coincided with other investments. A small or zero effect would not make the study unsuccessful. It may instead show that money is not the binding constraint on urban growth.

17. What Would Count as a Finding?

The study is designed so that more than one outcome can be informative.

If reforms raise revenue and economic activity also rises, the results would support the view that municipal fiscal capacity can contribute to urban growth. The mechanism analysis would then tell us whether the effect appears to come mainly from infrastructure, borrowing or better information.

If reforms raise revenue but economic activity does not respond, that would be equally important. It would suggest that the Economic Survey's emphasis on municipal revenue may be necessary but not sufficient. Cities may be held back by planning restrictions, fragmented metropolitan governance, weak project execution, land-market problems or other institutional constraints.

A small but precisely estimated effect would also be meaningful. It would imply that municipal fiscal reforms help, but only modestly. That is very different from an imprecise estimate that cannot distinguish a small effect from zero.

The paper should therefore not be written as a search for a positive result. Its contribution is to provide credible evidence either way.

18. Policy Implications

The policy implications will depend on what the evidence shows.

If GIS-based reforms produce economic gains beyond the effect of additional revenue, central and state governments should treat the property register and spatial database as development infrastructure in their own right. Supporting GIS enumeration may then be more valuable than simply rewarding higher tax collections.

If the borrowing channel dominates, reforms that improve municipal creditworthiness and allow financially credible cities greater access to capital markets may be more important. This would be consistent with the Economic Survey's proposal to permit cities meeting revenue-effort benchmarks to issue municipal bonds without state guarantees.

If capital spending is the key mechanism, performance-linked transfers should pay attention not only to revenue mobilisation but also to how effectively additional resources are converted into public infrastructure.

If higher revenue does not improve economic activity, policymakers should be cautious about assuming that fiscal reform alone will make cities more productive. In that case, greater attention should go to planning authority, land-use regulation, metropolitan coordination, project implementation and institutional capacity.

One conclusion is likely to be useful regardless of the final result: reliable municipal financial information is essential. A performance-based transfer system cannot work fairly when some states have nearly complete standardised accounts while others have very limited coverage.

19. Limitations

- The study does not yet contain estimated results. It is a research design.
- Reform dates are difficult to measure precisely because implementation often takes place in stages.
- The quality of the administration that introduces a reform cannot be perfectly separated from the reform itself.
- Night-time lights are only a proxy for economic activity and may perform differently across service- and manufacturing-oriented cities.
- Financial data are not available equally across states and municipalities.
- Formal company registrations miss a large informal urban economy.
- The focus on municipal corporations means that smaller municipalities and nagar panchayats are under-represented, even though fiscal constraints may be particularly severe there.
- The number of confidently dated reforms may be too small to detect very modest effects with high statistical precision.

20. Conclusion

The question in the title—do financially stronger cities grow faster?—looks simple, but the answer cannot be obtained by comparing rich and poor cities. A prosperous city naturally has a larger tax base, so its higher municipal revenue may simply reflect its prosperity.

The proposed study takes a different route. It focuses on changes in property-tax administration that improve a municipality's ability to raise revenue. By using the different timing of these reforms across cities, and by following economic activity before and after reform, the study aims to come closer to a causal answer.

The broader issue is important for India's urban future. Indian cities are expected to accommodate a growing population and generate an increasing share of economic activity. But urban growth will not automatically produce productive and liveable cities. Municipal institutions need enough resources, information and authority to respond to local problems.

The central contribution of this research, therefore, is not to assume that money is the answer. It is to find out whether it is. If stronger fiscal capacity improves economic performance, the evidence can help design better property-tax systems, transfers and municipal borrowing arrangements. If it does not, the research will point policymakers toward the constraints that matter more.

That is ultimately the value of the question: not to prove that financially stronger cities grow faster, but to understand whether giving cities greater fiscal capacity actually helps them become more productive places for people and businesses.

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