Financing Urban Infrastructure in India through Tax Increment Financing Instruments: A Case for Smart Cities Mission

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Financing Urban Infrastructure in India through Tax Increment Financing Instruments: A Case for Smart Cities Mission

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Abstract

The paper is aimed at exploring the Tax Increment Financing (TIF) model for financing planned urban development programmes and projects in Indian cities – smart cities, in particular. This is based on the premise that the TIF approach offers an excellent opportunity to Urban Local Bodies (ULBs) for the creation, capture and recycling of values in cities support funding of core urban infrastructure in a sustained manner. The paper describes the key elements of the TIF model and explains why it is a theoretically elegant and practically desirable strategy for possible adoption by Indian cities at the present stage of urban evolution, when municipal finances are precarious and the municipalities are also not in a position to generate current revenue surplus. The paper is based on the principle of 'theory follows practice and vice versa', case studies on TIF as implemented internationally. Finally, the paper suggests directions as to how the TIF principles could be incorporated into the framework of financing innovative projects under the Smart Cities Mission, including accessing capital market funds through municipal bonds. The key findings of the paper suggests that the efficacy of tax increment financing tools in Indian cities will depend on several factors: the versatility of city development strategy and plan; reforms in municipal finance system; reforms in spatial planning; effective design of TIF projects and financing strategies, including mechanisms for value capture and recycling to catalyze economic growth-enhancing enterprises that create further values to land-owners and the city; and human resource capacity to plan, design, finance, implement and monitor projects . If designed well, TIF instruments can act as powerful tools to augment external economies of agglomeration and networking and create economic growth momentum, generating a self-financed or even surplus-generating process of planned urban expansion, development and renewal.

Keywords: Tax Increment Financing, Smart City, Value Capture Financing, land based instruments, Netwroking Economics, Agglomeration Economics
JEL Classification: O18, R31, R51

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1. Introduction

To address the key challenges of urbanization in the country, the government of India had launched three major missions in 2015. Among them, Smart Cities Mission was one which became the talk of the town as soon as it was released. The main aim of the mission was to transform 100 cities into Smart cities that would provide smart solutions to urban issues. The other two were Atal Mission for Rejuvenation and Urban Transformation (AMRUT) and Housing for All by 2022. These new initiatives were aimed at making India's urbanisation process efficient, sustainable, equitable and inclusive. In particular, the Smart Cities Mission aims at promoting economic growth, strengthening urban governance and improving service delivery to urban residents through support to 'smart' cities, selected based on a nationally competitive process. Smart cities will provide an infrastructure that uses 'smart' solutions to improve civic service delivery, including innovative ways to mobilise resources for planned urban development. The success of the Smart Cities Mission will crucially depend on how city infrastructure development and renewal projects are structured and implemented. Financing core urban infrastructure, leveraging municipal revenues along with state and central grants to raise external resources is a key challenge for not only the smart city managers but also policymakers in India.

Like the Smart Cities Mission, the previous programme, JNNURM had the objective of using central and state grants to supplement municipal revenues for raising resources from the market. JNNURM committed a central grant to the tune Rs.100, 000 crores for projects involving urban infrastructure and basic services to the poor for being spent over the 7-year mission period 2005-12. As against this amount, the Planning Commission of India allocated a sum of Rs.66, 085crores during the period. However, the actual allocation made based on the progress achieved by cities concerning projects and reforms over the period was Rs.45,066 crores. Against this amount, Rs.40,584 crores could be released by 2011-12. A key problem with JNNURM was that many ULBs could not mobilize their share in time as they failed to undertake basic reforms in municipal finance and administration. Some State Governments also did not provide their share in time. The 23 reforms stipulated by JNNURM included resource mobilization by restructuring user charges and property tax. However, these reforms were carried out only partially. At the end of the mission period, the ULBs were far from achieving full cost recovery in respect of core civic services such as water supply, sewerage, drainage, solid waste management, etc. Ironically, the 2017 Economic Survey of India 2016-17 reveals that Indian cities like Bengaluru and Jaipur hardly collect 5-20 per cent of their property tax potential. The non-exploitation of assigned resources with ULBs has resulted in their inability to finance core urban infrastructure and services.

A conspicuous observation from the implementation of JNNURM is that due to central and state grants being readily available, there was not much 'own' effort on the part of municipalities to raise resources from the market. Paradoxically, only three municipal bonds were issued in India during the 7-year mission period, mobilizing a meager Rs.1, 500 crores. In a way,

JNNURM adversely affected the municipal bonds initiative launched in India in the 1990s based on a recognition that borrowing from the capital market was the only practical way to finance the huge 'backlog', 'current' and 'growth' needs of urban infrastructure. The performance of JNNURM in catalysing local resource mobilisation and soliciting municipal finance reform to raise adequate resources for financing city development plans was not at all up to the mark. This is an important lesson for consideration while designing and implementing projects under the Smart Cities Mission. Sustained funding for development of core infrastructure facilities in unison with the requirements of economic growth is a major challenge for smart cities and thus arises a need to search for and adopt innovative instruments. It must be recognized that cities lead to various kinds of gain to different stakeholders in the economy, which translates into the enhanced tax base of all the levels of a federal government. Hence, if a share of the enhanced revenues is escrowed to repay the debt incurred for financing benefit-generating and value-creating projects, then the sustained funding of urban development plans could, in principle, be possible. This is the central idea behind the innovative 'Tax Increment Financing' (TIF) paradigm adopted by the United States, Australia, Canada and other counties. This model is considered desirable for cash-starved cities in India, including those selected under the Smart Cities Mission. These cities could overcome their current revenue constraints by adopting financially sound, innovative and futuristic plans based on the TIF framework and undertaking current infrastructure projects financed by debt.

In the light of the above, the paper is aimed at exploring the TIF model for financing planned urban development programmes and projects in Indian cities – smart cities, in particular. It is based on the premise that the TIF approach offers an excellent opportunity to Urban Local Bodies (ULBs) for creation, capture and recycling of values in cities to support funding of core urban infrastructure in a sustained manner. Specifically, the paper contributing the literature by examining different approaches adopted by Indian cities, smart cities, in particular, to finance and implement core infrastructure projects, and make out a case for tax increment financing (TIF) as a robust strategy to promote planned urban development. The paper also describe the key elements of the TIF model and explain why it is a theoretically elegant and practically desirable strategy for possible adoption by Indian cities at the present stage of urban evolution when municipal finances are precarious. The paper adopted the case studies approach on TIF as implemented internationally, especially in the United States to understand the TIF process, the merits and demerits of the method, and the factors that implement TIF successfully.

The key findings of the paper surmised that a TIF approach is very relevant for cities in India, including those selected under the Smart Cities Mission. This is because, while most cities suffer from a lack of current revenue surplus to finance worthwhile development projects on a 'pay-as-you-go' principle, they can still bank on future tax increments due to innovative urban planning and implementation of value-creating projects, innovatively structured. However, a robust approach based on the TIF principle is yet to be adopted by cities in India to finance area-based and city-wide infrastructure projects. Even many smart cities are yet to adopt the TIF approach.

This paper is meant to assist officials of urban local bodies, especially smart cities in structuring innovative projects and designing municipal finance improvement instruments to sustain the funding of value-creating urban development, redevelopment, renewal and expansion programmes. It is also meant for policy-makers at the state and central levels to structure reforms in the municipal finance system in India. Such reforms are necessary in view of the fact that cities have a fundamental role to play in economic growth due to their agglomeration

externalities. They create external economies and multiplier effects for growth at a stage when the economy is resource-deficient.

The balanced of the paper is planned as follows. Section 2 presents features of the Smart Cities Mission and their key implications for the design of financing strategy for smart projects. Section 3 highlights the challenges of urban infrastructure financing in India; it presents arguments as to why the TIF approach is promising. Section 4 refers to the theoretical underpinnings of TIF and challenges in its implementation to guide policymakers and administrators. Section 5 dwells on international practice in TIF as followed in the United States and other countries. Section 6 presents the broader framework for value increment financing as a robust, principle-based strategy to finance planned urban development linked to borrowing. Section 7 presents a toolbox of TIF financing instruments for adoption by cities in India to implement urban development, renewal, rejuvenation and expansion projects. Section 8 concludes.

2. The Smart Cities Mission

The Smart Cities Mission aims at the creation of replicable models of urban development and renewal for wider execution across the country. It was slated for implementation over the period 2015-16 - 2019-20 covering 100 cities. The Government of India had committed investment of Rs.48,000 crores, with each city smart city receiving Rs.100 crores per annum for five years. States and ULBs will mobilise another Rs.48,000 crores based on a 50:50 sharing formula. These grants by both the levels of government will act as a catalyst to mobilise internal and external resources, including local user charges, taxes, other inter-governmental transfers and borrowing on the part of ULBs. Some key features of the Smart Cities Mission are summarized as follows:

- It promotes mixed land use in area-based developments –to make land use more efficient, it plans for unplanned or under-planned areas that contain a range of compatible activities and land uses close to one another;
- Housing and inclusiveness – expand housing opportunities for all the sections of the society, especially economically weaker sections (EWS) and low-income groups (LIG);
- It plans to create walkable localities with focus on non-motorised transport (NMT) modes – the main aim is to reduce the congestion, air pollution and resource depletion, and to boost the local economy, promote interactions and to ensure security. The road network is strengthened for pedestrians and cyclists as well along with vehicles and public transport. It also aims to provide the necessary administrative services within walking or cycling distance;
- Open spaces will be developed and preserved –to enhance the quality of life of the citizens, and to reduce the urban heat island effects and generally promote the ecological balance, parks, playgrounds, and recreational places will be developed;
- A variety of transport options will be promoted – Transit-Oriented Development (TOD), public transport and last-mile para-transport connectivity;
- Another major part of the plan is to make governance citizen-friendly and cost-effective– the scope of online services will be increased to bring about accountability and transparency and to reduce the cost of delivery and for providing the civic services without the need for people to go to municipal offices, online services will be developed especially using mobiles. It also focuses on forming e-groups to listen to people and to

obtain feedback and use online monitoring of programs and activities with the aid of cyber tour of worksites;

- It gives an identity to the city – based on the main economic activity of that place, like local cuisine, arts and craft, culture, sports goods, health, education, furniture, hosiery, textile, dairy, etc.;
- As the name suggests, it applies 'smart solutions' to provide for infrastructure and services in area-based development to make them better, e.g., making areas less vulnerable to disasters, using fewer resources, and providing cheaper services.

The Smart Cities Mission suggest four models for the design and implementation of smart projects. These are:

- City improvement (retrofitting): Under this, an existing built-up area, greater than 500 acres, is developed to make it more efficient and livable.
- City renewal (redevelopment): Existing built-environment in an area of more than 50 acres is replaced and co-creation of a new layout is enabled, especially to strengthen infrastructure, mixed land use and increased density.
- City extension (greenfield development): Here an existing vacant area of more than 250 acres is developed using innovative planning, plan financing and plan implementation tools with special provision for affordable housing, mainly to accommodate the poor.
- Pan-city initiative: Under this, at least one smart solution is applied to cover larger parts of the city.

The success rate of the models mentioned above will depend, among other things, on the financing strategy adopted and the capacity of the ULBs to leverage resources for core infrastructure facilities and effectively implement projects. The financing strategy will include appropriate area-based and city-wide resource mobilization instruments, including user charges, benefit taxes, intergovernmental transfers and value capture tools meant to mobilise adequate revenues to repay the debt incurred for financing lumpy capital investment projects. Models (i), (ii) and (iii) suggest that land-based financing tools need to be integral parts of this strategy. The same logic can also be extended to city-wide programmes under model (iv), which lead to a city-wide value creation process. Urban development and renewal projects that pass the benefit-cost test are likely to generate sizable increases in land values that can be exploited to finance the investment costs, which make such increases possible.

The role of the smart cities to act as engines of economic growth and structural transformation cannot be sustained unless they are in a position to meet the infrastructure needs of productive economic activities. Such needs are so huge that the only practical way to address them is to resort to market borrowing. But the debt incurred for financing such infrastructure projects will have to be repaid. This calls for the structuring of debt-servicing mechanisms to ensure timely repayment of debt. It is in this context that the Tax Increment Financing (TIF) model offers a promising strategy. Majority of the municipal corporations and municipalities in India do not generate a sizable amount of revenue surplus to support the 'pay as you go' method of financing the infrastructure. However, while the current municipal revenues remain precarious, cities could hope to come out of their low-level equilibrium trap by smart planning, smart design of development and renewal projects, and effective implementation of such projects and embracing fiscal discipline. Innovative infrastructure projects, if structured well and implemented efficiently will create values and tax increments that can be captured, escrowed and

recycled to support a stream of continuing investments, leading to further values and additional tax increments.

3. Challenges of Urban Infrastructure Financing

India faces daunting challenges of urban infrastructure due to the widening gap between the needs of urbanization and resources available with ULBs and infrastructure authorities. According to the McKinsey (2010) reports, India needs to spend/invest Rs.9.74 million crores on its cities by 2030, out of which Rs. 5.31 million crores would be for capital expenditure alone. It is projected that the largest requirement for capital spending would come from projects like affordable housing and followed by mass transit. The share of expenditure on affordable housing is so huge, that if we remove it, the capital spending required until 2030 would come down to Rs.3.54 million crores. Also, the McKinsey report informs that the annual per capita spending by India on cities stands at $50, which includes the capital and operational expenditures, which is fourteen per cent of China's expenditure of $362, and less than ten per cent of South Africa's $508. Compared to the United Kingdom's $1,772 expenditure, India is way behind. The report also estimates that India would need to scale up the figure eight-fold, to increase it from the present $17 to $134, which is roughly equal to raising it from 0.5 per cent of the GDP to 2 per cent of GDP every year. Similarly, the High Powered Expert Committee (HPEC 2011) for estimating the Investment Requirements for Urban Infrastructure Services projected that India would need Rs. 3.92 million crores for urban infrastructure investments over the period 2012-31 which excluded the operation and maintenance (O&M) costs. If added, the figure would increase to Rs. 5.92 million crores.

While the investment demands of urban infrastructure are colossal, the finances of ULBs in India are precarious. We have observed that the municipal revenues are not stable and its share in combined central and state revenues fell from 3.71 per cent in 1990-91 to 2.43 per cent in 2000-01, is less than 2 per cent from last many years. Also, the ratio of municipal revenues to GDP has been falling continuously. In India, the ratio is about 1 per cent as compared to Poland (4.5), South Africa (6.0) and Brazil (7.4). Data on municipal finance collected by the Fourteenth Finance Commission reveals that the total revenues of municipal bodies in India were less than Rs.100, 000 crores in 2012-13.

While there is a huge requirement of funds for investment in urban infrastructure in India, the resources available with municipal corporations and municipalities are too meagre. After the abolition of octroi in all the cities due to the introduction of the new GST regime, the municipal authorities are left only with a property tax as the sole major ‘own’ tax revenue source. However, the property tax remains grossly under-exploited. A two-pronged strategy is called for to reform municipal finances in India. Firstly, the country needs to strive to significantly raise the size of the municipal sector to enable the cities to function as drivers of economic growth. The basket of ‘own’ revenues sources needs to be enlarged. Secondly, the ULBs must exploit the instruments already available with them. They must tap the potential of the property and other land-based taxes.

As regards the strategy of financing civic infrastructure and services, Bahl and Linn (1992), after a study of urban finance system in several countries around the world, recommended the following golden rules to identify revenue sources appropriate for financing particular types of local expenditures:

"1. Where the benefits of public services are measurable and accrue to readily identified individuals in a jurisdiction, user charges are the most appropriate financing instruments;
2. Local public services such as administration, traffic control, street lighting and security, which are services to the general public in the sense that identification of beneficiaries and measurement of benefits and costs to individuals is difficult, are most appropriately financed by taxes on residents;
3. The cost of services for which significant spillovers to neighbouring jurisdictions occur should be financed substantially by state or national inter-governmental transfers;
4. Borrowing is appropriate to finance capital outlays on lumpy infrastructure facilities, particularly, public utilities and roads, whose benefits spread over generations."

In practice, a mix of instruments has been adopted by countries around the world to finance their urban infrastructure needs. Borrowing has been a major instrument to finance lumpy infrastructure projects during the urban transition of developed countries. In the United States, municipal bonds, comprising revenue bonds and general obligation bonds have been the principal instruments to raise resources for building city infrastructure facilities. However, a fundamental requirement for debt financing, whether through bonds or otherwise is 'credit-worthiness' on part of the borrowing entity and escrowing of 'predictable' revenues to repay the debt incurred. This calls for careful designing of urban infrastructure projects along with appropriate structuring of financing instruments. In this context, the Smart Cities Mission warrants that cities structure area-based retrofitting, renewal and green-field projects as well as pan-city initiatives along with innovative strategies to finance them. The basic premise on which the Mission is based is that smart area-based and city-wide projects will be able to generate adequate resources which can be tapped to repay the debt incurred to finance them. The fact that the central and state governments are providing grant funds for projects taken up under the Smart Cities Mission suggests that such projects should be in a position to bear the burden of a reasonable amount of debt. The 'smart cities' of India need to lead the way by adopting smart principles and practices to part-finance projects with debt through municipal bonds. In this context, there is a need to look to theory and international practice of Tax Increment Financing (TIF).

4. Tax Increment Financing: Theory

Tax increment financing (TIF) is a flexible instrument for financing urban development, expansion or renewal to stimulate local economic development (LED). It aims at escrowing anticipated revenues from such projects, including tax increments due to their execution to service the debt incurred for financing. TIF is an innovative tool that uses future revenue streams to finance current infrastructure programmes. Originally started by California in 1952 to raise local funds to match federal grants under the Housing Act of 1949, TIF has emerged as the "most popular" instrument adopted by local governments in the United States to finance their infrastructure development and rehabilitation needs (Briffault 2010). When California initiated TIF, it was called a "catalyst for redevelopment". However, the TIF framework is generic, presenting broader possibilities, which can apply to a range of urban development, redevelopment, renewal and rejuvenation projects. TIF is rooted in the "value increment

financing" paradigm that uses value creation as a method to finance investments. Today, 49 states in the United States have some form of TIF legislation. In many US cities, TIF is considered "*the only game in town"* to finance local economic development. The model has also spread to Australia, Canada and other countries. TIF is regarded as a potentially beneficial tool for developers, residents, communities, businesses and local authorities. It is based on two main principles which are: 'growth pays its way' and 'beneficiaries pay'. United States has extensively used TIF in different formats, including the Special Assessment District and Business Improvement District. "Local governments use TIF for many purposes, including attracting new business, revitalizing downtown, rejuvenating dilapidated areas, relieving fiscal stress, providing for off-budget funding of infrastructure to avoid political opposition, capturing tax revenues from overlapping jurisdictions, and retaining or expanding existing businesses." (Ermasova and George 2017)

Although the TIF laws in the United States vary from state to state, the basic theory behind TIF is simple. Territorially, a development, redevelopment or renewal district is demarcated in a city or urban agglomeration and the pre-project taxes, especially property tax, based on the assessed valuation of property is determined – called the 'base value'. The taxes continue to be levied after the TIF-supported project is executed. But the impacts of the project leads to an increase in the local tax bases, especially property tax base due to the increase in assessment valuation – called the 'tax increment'. The revenue thus generated by applying the tax rates to the increased tax base in the TIF district, for a fixed number of years, is kept aside to be paid to the TIF authority or the local economic development agency to defray expenses or service the debt incurred for undertaking development. The TIF-sponsoring authority issues municipal/infrastructure bonds, in case of large TIF districts, which are backed by the projected revenue increments. The proceeds from the bonds are usually used to pay for the upfront investments, jumpstarting development and initiating a spiralling process of value creation, value capture and value recycling, leading to sustained funding of infrastructure. The theory behind the TIF process is captured in terms of the following statement:

> *In theory, the process is a closed circuit: the incremental revenues pay for the public expenditures, which induce private investment, which generates the incremental revenues, which pay for public expenditures. Eventually, the TIF program expires, the bond is paid off, and the district's entire assessed valuation – base value and increment – becomes subject to taxation for the general purposes of all the local governments with jurisdictions over the area.* (Briffault 2010, p.68).

As seen from the above, the TIF theory recognizes the close relationship between public and private investments. On one hand, public investment is critical for catalyzing private investment needed to enhance productivity, create jobs and accelerate economic growth. On the other, private investment is essential to enable growth to occur and sustain; growth also generates the finance needed to support investment in public infrastructure. In this context, research refers to the concept of "public investment multiplier". However, for the beneficial impacts of public investment on growth to materialize, the government must be in a position to make timely investments in core infrastructure facilities. As TIF captures the infrastructure-induced increases in tax bases, land and property values in particular, and as it does not adversely affect the availability of land for productive activities, it is a versatile method of financing urban infrastructure. In particular, increases in land values arise with the implementation of various forms of infrastructure such as mass rapid transit, light rail transit, expressways, etc. and capitalization of such infrastructure facilities. This increase in value, called "uplift" or

"increment" occurs in different degrees within the "TIF district" or the project-influence area. By generating uplift in properties in the impact zones, the new infrastructure financed by TIF leads to the intensification of development within the TIF district. This causes an increased demand for land which translates into windfall gains in land and property values. If the uplift is sufficiently large, considerable cost recovery in infrastructure will occur. TIF projects focus on increments in property taxes, though in principle, other taxes can be brought to the ambit of TIF. The test is to establish a rational nexus between TIF investment and tax increments.

Under a TIF program, the concerned local authority first designates a TIF district. It then estimates the natural rate of property tax growth that would have occurred had the new infrastructure development not taken place. This provides an estimate of the national assessment base or "base value" for the TIF district. Over time, the local authority compares this with the actual TIF district assessment base, the difference being "assessment increments" that translate into "tax increments". With the prevailing property tax rates being applied by the local government to the new assessed valuation in the TIF district, the tax increments are dedicated to financing the TIF infrastructure. In this context, there are two common types of TIF strategies:

Blended: TIF is applied to infrastructure-induced property assessment and at the general tax rate.

Uplift-only: TIF is applied only to uplift – infrastructure-induced increases in land or property value – and at a special supplemental tax rate, which is often equivalent to the value capture rate.

'Blended TIF' is suitable for application under any standard type of property tax system. The 'uplift-only TIF' aims at avoiding the adverse effects of a tax on buildings, thereby dampening construction activities. It taxes unearned increments in land values and thus, the landowners are not worse off as long as the benefits of infrastructure accruing to them exceed the costs. 'Uplift-only TIF' has greater advantages over 'Blended TIF' in terms of economic criteria. However, in practice, the North American municipalities, which have adopted TIF, have opted for the blended approach as it is relatively simple and also avoids political conflicts associated with vested interests in land.

When a TIF district is established, the municipality or the local taxing body, which is equipped with the power to levy a property tax, continues collecting the base amount of the tax that it was currently receiving from within the district's defined boundaries. However, when additional tax revenues are generated, the associated "tax increments" are kept into a special fund or are given to the TIF authority. It can be used to reimburse the developer's qualified costs, make additional improvements, or reduce the outstanding economic developmental costs of the municipality. The funds can also be used to repay the debt mobilized from the market to finance the development or renewal project by the public agency that established the district. After the abolition of the TIF district, often after 20-25 years, the tax base returns to the original jurisdiction or taxing authority. If the project is successful, the new tax base will be considerably larger than what it was before the development activities began.

Mathematically, a generic version of the TIF model can be explained as follows. Suppose the TIF law or the agreement between the concerned authorities involved in a TIF project stipulates that only the increment in property tax, based on assessed valuation, is to be earmarked for the TIF authority to enable it to borrow funds and service the debt incurred to finance development or renewal. Let V_t represent the total assessment or property value in tax year 't', and let the property tax rate be 'r'. We also assume that 'r' is the same before and after

investment in the TIF project. Thus, pre-TIF property tax collection = rV_{t-1} and post-TIF property tax collection (estimated) = rV_t, implying that the 'tax increment' will be = $rVt - rV_{t-1}$ = $r(Vt - V_{t-1})$. The standard TIF model assumes that this tax increment is allocated to the TIF authority or a TIF fund hypothecated toward the financing of the TIF project.

Generally, the formulation of TIF projects assumes that the property tax rate remains unchanged between the pre-TIF and post-TIF scenarios and changes in the valuation assessment primarily lead to increase in revenues. However, often the local authority levies value capture taxes such as betterment levies on the windfall gains accruing to land and property owners, following the implementation of urban infrastructure projects. These value capture taxes apply to both land and property values. Thus, in principle, both increase in land value/property value tax base and land value/property value increment tax base can be combined to finance TIF projects. Alternatively, the local authority could consider a single tax rate that takes into account both the tax base and increment in the tax base. Suppose that the local authority decides to collect, in addition to property tax, a value capture or value increment tax, i.e. the authority wants to capture a part of the increase in the values of land/property in the city due to TIF investments at a rate different from that captured by property tax based on assessed valuation. Let

r= Tax rate applied to all properties in the city
s= Value capture rate decided by the local authority
δ = Incremental rate of change in property value

The tax on property value in pre-TIF and post-TIF scenarios can be determined as follows:

$$\text{Base Tax Revenue} = rV_{t-1} \quad (1)$$

The value capture revenue is given by the formula

$$\text{Value Capture Revenue} = (V_t - V_{t-1})s \quad (2)$$

But since the property values in the current year, equal property values in the previous year augmented by the rate of change in such values, the expression (2) can be rewritten as:

$$\text{Value Capture Revenue} = (V_{t-1}\,(1+\delta) - V_{t-1})s \quad (3)$$

The above expression can be simplified as follows:

$$\text{Value Capture Revenue} = \delta s V_{t-1} \quad (4)$$

Adding the two revenue calculations together, i.e. (1) and (4) and dividing the total by the tax base in order to obtain an overall property tax rate, we have

$$\text{Overall Property Tax Rate} = (rV_{t-1} + \delta s V_{t-1})/\, V_{t-1} \quad (5)$$

Equation (5) guides the determination of tax revenues that can be escrowed to finance worthwhile TIF projects. It may be mentioned here that the local authority may decide to levy a

property value increment tax only in the TIF district and not the city as a whole. The formulae presented above can be modified accordingly.

In general, TIF fundamentally permits a public authority to reserve the "tax increments" generated from within the TIF district to fund the infrastructure that has contributed to this increment. It also principally represents a reallocation of a share of incremental revenue from the tax-collecting authorities to the TIF agency, which is usually a special purpose vehicle created by the local and state government authorities. It may or may not include private developers. In some cases, these increments are augmented by various other instruments like special assessment, development impact fee and betterment levy. Tax increments can also be used to secure a loan, or leverage an up-front investment, promote a public-private-partnership (PPP) or to undertake further development on pay-as-you-go principle.

Under a TIF model, a public authority or a private sector business or a consortium proposes the establishment of a TIF district. The local government prepares a detailed proposal for a specific or geographically delineated area. A general estimation of the land and property values of the area in the TIF district and the current tax revenues therein is undertaken. The authority examines whether the proposed TIF district meets the legal criteria prescribed for its establishment or not. Although the justifications for a TIF project vary from state to state in the United States, they usually include "blight" and "but for" tests. The "blight" test measures the degree of deterioration of the area and the economic decline, while the "but for" test calculates the possibility of future development of the district without the implementation of a TIF program. Passing these tests requires demonstrating that without TIF assistance, local economic growth or development at the proposed level would not otherwise occur.

When the TIF proposal meets the legal tests, the concerned local government or authority sets up a special-purpose agency or TIF authority to undertake development, redevelopment or renewal. This authority then demarcates the TIF district, conducts a survey, and prepares the detailed TIF plan along with the estimates of the costs, adhering to prevailing spatial planning norms. The plan is prepared in consultation with local and state governments, different community groups and private developers along with various other stakeholders. Then bonds are issued by TIF authority to meet the upfront costs. These bonds are usually "infrastructure revenue bonds" that are tied with future tax increments in the TIF district. Over a while, TIF leads to property development which in turn increases the property values and also enhances the tax bases in the district. These increments are then used to service the debt.

Different advantages of TIF are as follows: (i) new development will pay for itself; (ii) investments that create value and/or generate resources are facilitated even when the local body is not in a position to take up such investments; (iii) lacunae in collecting upfront contributions from the developers through development charges, exactions or impact fees, which discourage development, are avoided; (iv) long-term spatial planning and funding of planned urban development are facilitated; (v) a market test for infrastructure funding through debt contributes to rigorous project selection that passes the benefit-cost test; (vi) an equitable approach is promoted by spreading cost over generations and making beneficiaries pay a fair share; (vii) authorities attempt to avoid time and cost-overruns in project implementation as debt-payment is closely linked to revenue generation; (viii) fiscal discipline and accountability on the part of the local authority are promoted so as to avoid 'free lunch', (ix) fiscal problems of ULBs and municipalities at that moment do not act as a hindrance to the funding of new projects; and (x) urban planning and infrastructure development strategies are used as resource by the local

authority to come out of the vicious circle of 'no resources-no development-no tax increments – no development'.

While TIF can prove to be a broadly powerful tool, that generates substantial benefits, the model has several limitations. First, due to the politics that surround this tool; it becomes difficult to implement TIF during the periods of economic downturn or slow economic growth. In a situation where the municipal authorities are facing the prospect of declining revenues, doubts on the efficiency of this tool can translate into accusations that TIF benefits are not distributed equitably especially in a dampened growth scenario. This problem is aggravated by the fact that most of the residents do not completely understand the complexity involved in the designing and implementation of TIF. Secondly, as research has suggested, the TIF approach may not be effective in the most blighted areas of a city, areas must have at least some momentum for growth. Therefore, tools other than TIF are required to address the demands of the most distressed areas. Thirdly, TIF may not yield results when conceived in a static framework. There is a need for planners to respond to the dynamic realities of spatial economies and to address the needs of development by modifying the TIF to capitalize on emerging opportunities. There is a need to re-evaluate and reposition TIF districts continuously in response to emerging challenges. Fourthly, TIF project's financial feasibility and necessitate additional public subsidies which limit the ability of local government to fund civic services can jeopardize cost overruns or the revenue shortfalls. Fifthly, the local authority may not have access to these increments due to constraints of fiscal federalism. Lastly, the TIF plans must be developed cautiously and be used in combination with other incentives or part of comprehensive public-private partnership efforts.

TIF can be self-paying or even surplus-generating, especially in cities with rising land and property values. Overall, when ULBs' budgets are extremely tight and cities are unable to generate a current revenue surplus, this method is expected to be a versatile instrument of urban planning and plan financing in cities. TIF creates hope for cash-starved municipalities, which can rely on robust development strategy and fiscal discipline to develop or renew cities.

5. Tax Increment Financing: Practice

The United States has been the pioneer in tax increment financing (TIF) – for more than 65 years. The practice has also been embraced by Australia, Canada and other developed countries in different forms. In Australia, the concept of value increment financing has recently engaged the attention of states and municipalities. TIF has also been adopted by some Canadian jurisdictions, notably in Alberta and Manitoba. Ontario has enacted the Tax Increment Financing (TIF) Act in 2006. A key aspect of this law is that it allows municipalities to recover costs through both municipal and provincial property tax regimes. The provincial contribution is more of a capital grant which is conditional to the fulfilment of projected infrastructure-induced rise in the assessment base of the TIF district. Interestingly, during the 2014 Toronto Mayoralty race, TIF was brought to the forefront of Ontario's public discourse. Mayor John Tory promised during his election campaign that he would use TIF to finance its Smart Track transit plan. While TIF is making inroads into several countries due to its simple, and yet powerful appeal, the long experience of the United States with TIF provides the most useful lessons for India's smart cities to design innovative financing strategies.

Tax Increment Financing: United States

State laws in the United States define the objectives and modalities for the design and implementation of TIF. The legal provisions vary considerably between states. However, the state laws showcase the same central idea which says that TIF can be an attractive instrument used to strengthen the economic development in an area that might otherwise not receive such development. According to this rule, the sponsoring authorities are required to justify it on the ground that "but for" the creation of the TIF district, the properties in this area would remain vacant or underutilized as compared to the detriment of development goals and community needs of infrastructure. Every state makes laws that specify the purposes for which the revenues from TIF can be used to support or leverage projects and programs within or related to the TIF District. The states also indicate the governmental services necessary for a TIF project. Under these laws, revenue from TIF can be used for the various purposes like, (i) public infrastructure development or redevelopment; (ii) façade improvements, (iii) project development and redevelopment costs including TOD and CBD development, (iv) various types of capital costs, (v) remediation costs; (vi) land assembly costs; (vii) technical and marketing support, (viii) revolving loans; (ix) professional services; (x) repayment of private debt incurred by the private developer; (xi) administrative expenses, including costs of personnel, studies, reports, management, etc. Different research studies in the United States have suggested that TIF districts tend to be more concentrated in areas with rapidly growing property values.

United States have been using TIF instrument for economic development since the 1990s rather than for the elimination of blight though this term is often found in the reasoning mentioned for the establishment of TIF districts. For example, Illinois, a state in the United States recognizes the area as blighted if it meets a minimum of five of the following thirteen qualitative factors:

- Dilapidation
- Deterioration
- Obsolescence
- Illegal use of individual structures
- Structures below minimum building code standards
- Excessive land coverage and overcrowding of structures and community facilities
- Lack of ventilation, light, or sanitary facilities
- Inadequate utilities
- Excessive building "footprint" (structure too big relative to property)
- Deleterious land use or layout that is considered noxious
- Environmental clean-up needed
- Lack of community planning and
- Declining assessed value

TIF Process: From Conception to Termination

State law in the United States generally prescribes the process for setting up and operating a TIF. The legislation that enables the TIF specifies detailed activities or checklists that the area must satisfy before taking up a TIF project. This also includes finding the need for setting up a TIF,

demarcation of the TIF district boundaries, mechanisms for financing TIF infrastructure, creation of a TIF management organization, financial disclosure and reporting requirements, etc. Law provide criteria for determining project feasibility, preparing TIF development plans and the TIF financing plan, adopting, implementing, evaluating and terminating the plan, etc.

Different methods to finance TIF projects have been used by the municipalities in the United States, like:

- Pay-as-you-go financing
- Developer financing
- Municipal financing
    - Revenue bonds
    - General obligation bonds
- Municipal financing with developer participation.

As part of the District Master Plan, the municipal assessor has to certify the Original Assessed Value of the Real Taxable Property before the establishment of a TIF district. This value, however, excludes the non-real property (equipment, vehicles) and those properties that are likely to become tax-exempt. The total annual tax increment which includes the incremental value and its associated revenues depends on the annual increased value as certified by the assessor and the agreed-to percentage to be "captured" within the TIF District. TIF revenues are calculated based on the initial tax rate in the base year and the estimated tax rate over the life of the TIF District. Also, for precisely estimating the projecting values of the TIF District, the projected new development and the redevelopment to be carried out in the district are considered. This work looks at regional market trends (5-10 year) and anticipated revenues growth as a result of the enhanced market opportunities arising due to economic development in the TIF District.

Due to the limitations associated with most of the financing methods, the government usually issues bonds to finance TIFs. While the municipality bears the long-term obligations that limit its flexibility of financing for issuing of debt for the other non-TIF projects, this option allows the government to undertake expensive, unusual projects that are often needed early in the lifecycle of a TIF. Another option available with the municipality is to issue the bonds while the developer of the TIF District simultaneously pledges to purchase all or a significant portion of them. This guarantees the market and can keep the interest and the issuance costs low while demonstrating the developer's faith in the project. Sometimes the bonds issued by the city are purchased by the developer and the developer holds them during the initial stages of the TIF site redevelopment. In such a situation, as soon as the TIF district starts generating a reliable revenue stream, the city remarkets the bonds to new investors. This approach reduces the risk of the city, especially during the early phases of the TIF district. Tax increment or tax allocation bonds represent debt financing for TIF-related projects. Although it is sometimes defined as a bond that is solely supported by incremental revenues, here it is defined more broadly to include bonds supported by:

- Incremental revenues (revenue bonds)
- Full faith and credit of the issuer (general obligation bonds)
- A combination of the two-hybrid bond.

A Case Study of TIF in Chicago

Chicago City in Illinois State has used TIF to a greater extent than any other big city in the United States. The TIF program in Chicago began in 1984 to promote business, industrial, and residential development in areas struggling to attract or retain housing, jobs, or commercial activity. In the past three decades, TIF has been the primary source of funding in the city to promote local economic development. TIF funds have been used for rejuvenating distressed areas, improving neighbourhood infrastructure, preventing localities from degrading into blighted conditions, and fostering local enterprise development. TIF has been instrumental in promoting public and private investments across the city. It has been used to build and repair roads, clean polluted land and put underused or unused properties into productive activities, usually in conjunction with private sector developers. Following the law, TIF funds are mobilised through growth in the Equalised Assessed Valuation (EAV) in a planned TIF district over a fixed period. The increase in revenue over and above the base is used to pay back debt or spent on a pay-as-you-go principle.

The legal basis for TIF in Chicago can be traced back to the Tax Increment Allocation Redevelopment Act, passed by Illinois State in 1977. According to this law, municipalities are allowed to capture property tax revenues derived from incremental EAV above the base EAV that existed before an area was designated as a TIF district. According to Ermasova and George 2017, "Through 2016, 514 municipalities had created 1,397 TIFs in Illinois State. A survey of municipalities shows that the average TIF project in the State produced four dollars of private investment for every dollar of tax increment investment. Investment of the $225 million of property tax increment induced $900 million of private investment State-wide, for a total of $1.125 billion". As regards Chicago, the city has created a total of 180 TIF districts since 1984.

TID districts in Chicago have focused on community projects, public improvements and incentives to attract private investments. They have covered a variety of activities like building and repairing the neighbourhood streets, alleys, bridges, and street lighting; modernizing and improving public schools; constructing and upgrading the public transit system; building and improving parks; increasing affordable housing; and promoting local economic development. The TIF funding is created by the increase in property values within a designated district over 23-24 years, or even up to 36 years if extended by the state of Illinois legislation. The guiding principles for effective use of tax increment funds help in boosting the tax base, hence increases the amount of tax increment generated in the district for re-investment within the district and ultimately expanding the property tax base for the district as well as the city, after the TIF ends.

6. Framework for Value Capture Financing

The tax increment financing model is rooted in the broader framework of value capture financing, increasingly becoming popular in cities of developing countries like India, striving to mobilize resources to meet the needs of infrastructure needed by economic growth. Cities create values and benefits for different stakeholders of the urban economy in various ways because of factors such as economic growth, population concentration, spatial planning, infrastructure development and external economies of agglomeration and networking. Particularly, growing cities lead to increments in land values that are unearned. The central idea behind this method is that if a part of these unearned gains or value increments is captured to meet the debt-service needs of

regional and urban infrastructure, a process of urban development could be ignited which would be self-financing. Borrowing funds using municipal bonds or other instruments can finance core infrastructure investments, facilitating agglomeration externalities, augmenting land and other tax bases, generating revenues and escrowing a part of the revenue increments to service the debt. International experience suggests that value capture financing (VCF) can offer a significant opportunity to cities in India to generate resources to finance urban renewal, development, and expansion programs.

Land value capture (LVC) tools, the most promising among VCF instruments, aim at capturing and recycling the spatial planning-induced and public infrastructure-led windfall benefits accruing to landowners. Such benefits, which are unearned increments in nature, are appropriate for capture to recover the cost of public infrastructure or undertake new capital works. Planned social overhead investments in public transit, arterial and radial road networks, water supply, sewerage and drainage systems, parks, stadiums and other core infrastructure facilities capitalize into land and housing values due to improved accessibility, better serviceability, and greater scope and intensity of development associated with changes in land use zoning and density. These benefits may be captured indirectly through their conversion into public revenues in the form of taxes and charges, or directly through on-site and off-site infrastructure improvements benefitting the community. The LVC approach presents several instruments which the public authorities can adapt to trade anticipated future revenues for a present infrastructure programme. The following table describes key-value capture instruments with potential for wider application in Indian cities.

Table

A Tool Box of Key-Value Capture Instruments

Instrument	Description
Land Value Tax	It is considered the most ideal value capture tool which is levied as a tax on the capital value of the land. This tax also helps in stabilizing the prices of the properties and discouraging speculative investments in land. Further, it contributes to equity; those gaining due to higher land value increments are required to pay more.
Vacant Land Tax	This tax is levied on those landowners who have kept land idle exceeding a certain period and not initiated development. VLT is a separate tax under municipal laws in some states in India, it can also be levied under the provisions of property tax. Internationally, VLT is levied at a higher rate than on property.
Land Use Conversion Charges	Land Revenue Codes lay down the procedures for getting permission to convert the land usage from agricultural to non-agricultural use in urbanizing areas which requires payment of conversion charge.
Betterment Levy	It is a one-time contribution linked to an increase in land values due to government policies and programs, including planned development of infrastructure. In many cities in India, this is collected as a charge to be paid beforehand or in advance based on the land value gain caused by development activities undertaken in the past or being taken up now.
Development Charges /Impact Fees	Development charges are upfront contributions towards the cost of facilities on-site and off-site like water supply, sewerage, drainage, parks, playgrounds, roads and other public facilities needed by new development. These charges, including external development charges, are

	the most commonly used land-based fiscal tool in some states such as Haryana. Impact fees are meant to address area-wide and citywide impacts emanating from high-density development, especially commercial development. While cities in the US have been adopting 'Development Impact Fees' for a long time, only Hyderabad city in India has initiated the levy of such fees.
Transfer of Development Rights (TDRs)	TDRs are used for dealing with the development rights from one area to another. They are usually given for the preservation of heritage landmark buildings, open spaces or cultural resources and provision of core infrastructure facilities, e.g. development of strategic roads in Hyderabad and metro rail in Bengaluru. It compensates property owners for loss on their properties.
Density Premium/ Floor Space Index Charges	Developed countries have used density premium to attract development in particular areas by permitting density over and above that permitted under town planning laws and building regulations. Some states and cities in India have adopted premium Floor Space Index (FSI) in relaxation of rules or by allowing additional development rights.
Land Monetization	Includes sale/lease of unused or underused land lying with government authorities, including Urban Development Authorities and ULBs, whose value has increased due to city development and economic growth.
Tax Increment Financing (TIF)	It is a tool that is being used commonly as a measure to capture values in developed countries, especially the United States. In this method, the incremental revenues from future gains in the property tax or by a surcharge on the existing property tax rate are ring-fenced for a fixed period to finance new investment in a demarcated area. These tools are more useful in financing new investments in the existing areas.
Land Acquisition and Development	Involves acquisition and development of land with part of the land used for sale or lease with enhanced development rights to finance the cost of acquiring and developing the infrastructure. A share of the land acquired for a project is monetized to finance the cost of the projects.
Land Pooling Scheme	LPS, alternatively called land readjustment/ town planning scheme – used in Japan, South Korea, Taiwan and India is a method of procuring the land where all the land parcels in an area are pooled, converted into a layout, developed with infrastructure, and a part of the land, in proportion to original ownership, is returned as reconstituted parcels. A part of the land is allocated for weaker section housing. Another part of the developed land is sold to finance the cost of infrastructure.

Source: Authors Compilations

Land value capture methods form a part of the broader portfolio of land-based revenue instruments. As many of the LVC tools cannot be separated from other land-based instruments, the urban planners, as well as the policy-makers, need to consider all the possible land-based revenue sources to finance urban infrastructure and services.

7. Financing Smart Cities in India with TIF

With the changing economic growth scenario, globalization and urbanization, the need to develop and maintain urban infrastructure are escalating. Funding the economic development programs is becoming increasingly difficult for cities. This is true for all developing countries, including India, where the municipalities are faced with huge 'backlog', 'current' and 'growth' needs of infrastructure, but are constrained by precarious finances. The fiscal crisis in cities is a cause of concern and calls for searching alternative ways for financing urban infrastructure and economic development. TIF is one of the most important tools available to achieve that goal.

TIF is not a new tax or any kind of special assessment on top of the already existing property tax. TIF, in fact, usually applies the same property tax rate that has been adopted by a municipality for all the properties in the city and also uses the same assessment process. It uses public investment to leverage private investment and economic activity within the district. TIF can contribute to the generation of local economic growth, agglomeration economies and mobilization of resources that catalyze the market for municipal bonds, including infrastructure revenue bonds.

While the development of the municipal bond market in India is a highly desirable option, the fact that India could mobilise a meagre Rs.13,531 crore through 23 municipal bonds over more than one and half decades since municipal bonds were initiated in India suggests that the real problem with Indian cities is their lack of credit-worthiness on the part of municipalities. Ironically, unlike cities in developed countries during their urban transition phases, Indian cities are not in a position to generate current revenue surplus that can act as seed money to leverage external funding. One key reason for this is the neglect of land and property taxes. The 2017 Economic Survey of India reveals that Indian cities tap only 5-20 per cent of the property tax potential. Fiscal effort and discipline on the part of urban local bodies are badly needed. The TIF models suggest that there is no 'free lunch' and the distressed municipalities can get out of their vicious circles by putting their house back to order. At the current stage of India's urban evolution, an all-out effort is needed to enable ULBs and other urban infrastructure authorities to mobilise resources, enhance fiscal discipline, generate seed money to leverage debt funds and improve credit-rating. This approach is also necessary to promote public-private-partnership projects based on annuity and other models. It is in this context that the smart cities of India need to adopt the tax increment financing model and make it succeed.

Operationalising TIF in India

The Smart Cities Mission is focused on innovative projects: area-based and citywide. Certainly, smartly designed projects will lead to an increase in land and property values due to spatial planning, infrastructure development, induced local economic development and agglomeration externalities that are associated with infrastructure accessibility and business productivity. They are expected to create both area-based and city-wide impacts and benefits. Thus, a combination of area-based and city-wide financing approaches could be used to finance smart city projects. However, the benefits of major investment projects spillover and city authorities may not have all the needed financial instruments to capture their benefits. For example, while an area-based approach will lead to increased land values, the municipal authority may not have the power to levy a land value tax, land value increment tax and betterment levy. When an area-based project such as the development of local transit system cannot be financed based on the rise in the land

and property taxes in the project area, recourse to citywide financing mechanism will be necessary. Unlike developed countries, where urban development projects could be financed based on revenue bonds, the inability of local authorities to finance projects with full cost recovery (revenue and capital cost) due to political reasons to make it expedient to combine project revenues and citywide revenue source to finance major urban projects. The reasons for combining both approaches are summarized as follows:

- Area-wide financing instruments like special assessment district, business improvement district, developer exaction, impact fee, betterment levy and tax increment financing may not be adequate to meet the costs of lumpy projects;
- Innovative projects, prepared to serve particular areas, may not be self-sufficient as they need connectivity to city-wide infrastructure systems such as highways, public transit system, water and sewerage trunk lines, storm water drainage system and city-wide solid waste disposal facilities, etc. whose capacity may need augmentation due to the demand from new projects.
- External economies of agglomeration and networking in cities due to implementation of major projects result in a spillover of benefits and costs which may not confine to the geographical boundaries of the area demarcated for a project, say, 50-500 acres. The internalization of such economies, which result in unearned increments in land and property values or increased tax bases of different levels of government, calls for a broader resource mobilization strategy, not confined to specific areas.
- Cities may not have the required instruments to exploit all the benefits of spatial planning and infrastructure development in an area of say, 50-500 acres. Benefits of area development projects capitalize into both area as well as city-wide tax bases of all levels of government and require broader partnerships between authorities for financing infrastructure and capturing value.

The above considerations suggest that it will be appropriate for smart cities of India to focus on area-based and citywide resource generation strategies both, although the focus may be on the mobilization of revenues from those who benefit the most.

While the issues of municipal finance in India require systemic reforms, immediate efforts are needed to implement the best practices of value capture mechanisms adopted in India and internationally as they make a lot of sense, but remain grossly exploited.

Some area-based projects will require a mix of financing instruments that target at (i) project-vicinity area, (ii) broader project benefit zone and (iii) the city as a whole. The discussions in this research suggest that the tax increment financing principle, combining elements of different approaches, could be an appropriate model for financing smart cities in India.

TIF should not be considered as the sole source of financing urban development or renewal. Also, it may not suit all situations in all cities. However, the TIF principle is robust in that it incorporates resource generation into the model of urban development. For TIF to be successful, a flexible land use policy along with a suitable framework for inter-governmental or public-private partnerships will be necessary.

The benefits of TIF may not be limited to tax increments arising for local government alone. Broader fiscal benefits from a TIF reflect in higher income and corporation taxes, goods and services tax, stamp duty on property transfer, etc. Thus, a TIF scheme benefits Central and State governments through increased revenues. They also benefit from the improved employment

opportunities, socio-economic regeneration of blight areas, improved public safety, enhanced growth and social inclusion. It is interesting to note that in a 'status quo' or 'no TIF' scenario, there is an authority that stands to gain. However, on the contrary, when a TIF is implemented well, all authorities get to reap the fiscal and non-fiscal benefits. As taxes subject to increments fall in the domains of different tiers of government, suitable inter-governmental partnerships are necessary for the structuring of TIF mechanism to repay debt. This requires inter-governmental partnerships as envisaged in the Smart Cities Mission document.

Under India's present fiscal federalism framework, different levels of government and their authorities exercise different fiscal powers assigned to them under the Constitution. State governments levy land-use conversion charge and non-agricultural land assessment in cities and their peripheral areas. Urban development authorities, which are parastatal agencies established by state governments, levy charges for institution and change of land use concerning the Master Plan. Such authorities and municipalities have the authority to levy development impact fees and internal and external development charges. Water and sewerage boards do not have the authority to collect water and sewerage betterment levies. Though the municipalities have the power to levy such betterment charges, they may be reluctant to share them with water and sewerage boards. Certain value-added taxes and stamp duty are levied by state governments. Capital gains tax and service taxes accrue to the central government. Goods and services tax is jointly levied by the central and state government. Thus, the tax increments occurring to various authorities due to the implementation of a versatile TIF project may not be available to the project or local authority which incurs a debt to finance such projects. These issues are important and need to be addressed by inter-governmental partnerships, agreements and covenants. One way is to structure partnerships between different authorities through the formation of Special Purpose Vehicles (SPVs) for specific projects based on consensus and ring-fencing of likely increments in taxes, charges and project revenues based on the benefit principle of public finance. The efficacy of a TIF strategy requires that the authority creating benefits must be in a position to capture and recycle some of these to create further benefits to the community. TIF may thus require other instruments like impact fee and incentive zoning facilitating higher density, mixed land use, etc in the TIF area.

The broad principle of TIF can be extended to private sector projects as well as public-private partnerships (PPP). One PPP option is that the private developer securitises loans based on expected public monies and undertakes development based on an annuity model. A second option is that the public authority develops connectivity infrastructure and the private sector undertakes development on a revenue-sharing formula. A third option is that the public authority proactively facilitates spatial planning or zoning and the private partner takes up development at its cost.

8. Concluding Observations

Tax increment financing (TIF) approach is very relevant for cities in India, including those selected under the Smart Cities Mission. This is because, while most cities suffer from a lack of current revenue surplus to finance worthwhile development projects on a 'pay-as-you-go' principle, they can still bank on future tax increments due to innovative urban planning and implementation of value-creating projects, innovatively structured. However, a robust approach based on the TIF principle is yet to be adopted by cities in India to finance area-based and city-wide infrastructure projects. Even many smart cities are yet to adopt the TIF approach. This is on account of several reasons. Firstly, TIF calls for escrowing of suitable revenue sources, especially land and property

taxes to repay debt. However, both land and property taxation and debt financing are neglected in India. There has been hardly any attempt by cities to adopt urban land taxation despite its strong merits; vacant land tax (VLT) which can be a key source of land-based financing of cities is neglected. Property tax is grossly under-exploited. Secondly, the authorities operating at the city level such as a municipality, urban development authority, highway undertaking, public transit authority and other infrastructure development agencies do not follow a holistic approach that includes value creation, capture and recycling as an integral part of the urban development strategy. There is a conspicuous lack of inter-departmental and inter-authority coordination. Thirdly, many authorities undertaking infrastructure development projects are legally not equipped with the instruments needed to mobilize tax increments that arise due to their efforts. Fourthly, the benefits of tax increments accrue to all levels of government, including state and central governments – to authorities other than those implementing projects at the local level. Thus, the local project authority may not be able to have access to adequate resources unless there are inter-governmental agreements for sharing tax increments. Lastly, the market for municipal debt, including that through revenue, general obligation and hybrid municipal bonds are not developed. Due to these factors, many cities in India are not able to exploit their agglomeration potential by integrating infrastructure development and land use and raise resources for planned urban development to support economic growth.

The recent issues of municipal bonds by Pune and Hyderabad Municipal Corporations have opened up possibilities for a renewed thrust on municipal bonds market development in India to finance core urban infrastructure projects. These bonds have adopted escrowing mechanisms under which user charges and property taxes are hypothecated towards loan repayment. The principle is sound. However, the escrowing mechanism does not fully reflect the tax increment financing (TIF) framework. Most projects required to be implemented by cities, including smart cities are land-based – whether development, redevelopment, renewal or expansion. They are bound to lead to enhanced land values in the 'most accessible' nodes of local economic growth and corridors. Such values will multiply, if they are accompanied by favourable land-use changes, for example, from residential to commercial or institutional or from low density residential to high-density apartment complexes. Higher density will also make transit system economically viable. If infrastructure development, land use zoning, development density and Floor Space Index (FSI) can be combined to suit the needs of contexts under a dynamic framework of urban planning, the bankability of value-creating projects could go up significantly. This calls for urgent attention to restructuring the current model of master planning in India, which is static.

The need for adopting a dynamic urban planning model is being increasingly realized by Indian cities. There is no reason why land use and density norms should remain static when a major game-changing project like a Mass Rapid Transit System (MRTS) or Strategic Road Development Programme (SRDP) is implemented. Interestingly, Bengaluru has recently adopted land-based taxes and charges in connection with raising resources for the development of metro rail in the city, while promoting transit ridership. While Bengaluru has set an example, there is a systematic need for adopting innovative land-based financing instruments learning from international and Indian practices and escrow the proceeds from the same to service the debt incurred for the development of infrastructure. VLT, impact fees betterment levies are ideal instruments for being escrowed under the TIF model to service municipal bonds. Other sources that can supplement land and property taxes include trade licensing fee, advertisement tax and town planning charges. The instrument of auctionable development rights as practised in Brazil may also

be explored. In addition to exploiting the potential of land-based financing sources, there is an urgent need for broad-basing the revenue-raising powers of ULBs in India to enable them to function as engines of economic growth.

It is important to appreciate that when there is no project developed in an area, TIF or otherwise, no government, whether local, state or central stands to gain through tax increment. However, if a worthwhile project, which passes the benefit-cost test, is implemented properly with success, then all the levels of a federal government can gain significantly by way of increments in their "own" tax bases. Thus, a strong case exists for win-win inter-governmental partnerships for designing, financing and tax increment-sharing in area-based and city-wide urban development projects which create benefit and cost spillovers. If a part of the increase in taxes made possible by investments in core infrastructure is escrowed to repay the debt incurred for such investments, the same could be self-financing. However, in the context of India's fiscal federalism, the authorities or special purpose vehicles taking up planned urban development projects may not have the requisite authority to capture all the tax increments generated by their projects and appropriate them for sustaining investments. Thus, the inter-governmental partnership approach and cooperative federalism spirit are necessary. It may be noted that over the years, ULBs in India have lost taxes like motor vehicles tax, entertainment tax, profession tax, octroi and entry tax. Also, there is an urgent need for powering ULBs with newer resource handles including new revenue-sharing mechanisms in the new GST era.

The efficacy of tax increment financing tools in Indian cities will depend on several factors: the versatility of city development strategy and plan; reforms in municipal finance system; reforms in spatial planning; effective design of TIF projects and financing strategies, including mechanisms for value capture and recycling to catalyze economic growth-enhancing enterprises that create further values to land-owners and the city; and human resource capacity to plan, design, finance, implement and monitor projects. India must harness the power of cities as drivers of economic growth and structural transformation through pro-active policies, including 'value creation, capture and recycling' and 'tax increment financing'. Capacity building, including research, training and handholding to facilitate innovative financing of cities is highly desirable. This is important as the design of TIF instruments is the key to their success. The Government of India may facilitate the same in the interest of economic growth and generation of public finance for socio-economic development, including urban and rural development.

The number of bankable projects in the urban sector has dwindled over some time. This is due to two key reasons. The first is the lack of capacity in ULBs and other authorities in the structuring of innovative projects. The second is the lack of application of innovative instruments such as tax increment financing (TIF) to establish escrowing mechanisms for ensuring that the borrowed funds are repaid in time. In this context, two key reforms are desirable: developing a municipal bond market at the earliest like the one in the United States and enabling municipalities to be credit-worthy.

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