

# Limitations of the Anti-Floor Space Index Position

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Floor space index is only one of the tools in a planning kit that has zoning, growth boundaries, inclusionary housing and the like. This article holds that plans for higher densities in cities such as Mumbai should include urban peripheral nodes and not just the urban core and central business district. Managing land uses and supplying infrastructure is easier in emerging urban nodes, which can encourage a balance between housing and jobs, and help establish an efficient use of expensive transportation infrastructure. To make this a reality, the development focus should equally be on improving institutional capacity.

Erick Guerra, a colleague and fellow scholar, provided critical feedback on this essay.

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In “Life between Buildings: The Use and Abuse of FSI”, (EPW, 9 February 2013) Shirish Patel presented an insightful evaluation of why the proposed changes to floor space index (FSI) in Mumbai might make the urban experience unbearable (2013: 68-74). His premise is that higher FSI would generate more built space, leading to higher crowding (density), and without new infrastructure, this would lead to unworkable urbanisation. This premise was based on a critique of research on height regulations in Indian cities, a comparison of density metrics between the islands of Mumbai and Manhattan, and the author’s extensive knowledge of Mumbai.

Given that the anti-FSI position is largely popular in India, it needs further examination, especially since initial evidence on Indian cities shows that (within limits) increasing FSI could be beneficial. Yet, increasing FSI is not enough, because this planning tool has to work alongside with zoning of land uses – housing, office, retail, industrial and so on – and the supply of adequate infrastructure. Further, city-regions such as the Mumbai metropolitan region are inherently more complex than central business districts (CBDs), such as south Mumbai or Manhattan, because they have multiple sub-centres outside the CBD. Therefore, my argument supporting density is not just in reference to CBDs, but also for peri-urban sub-centres. In writing this essay, my purpose is to open up Patel’s argument with an examination of the literature cited, to add arguments for the benefits of managed and phased densification, to expand on planning beyond FSI, and to generalise the findings to other cities.

The evidence on increasing FSI through removing height restrictions is gradually growing for Indian cities, and this section examines it. In the works that Patel cites,

including Bertaud (2004), Bertaud and Brueckner (2004), and Brueckner and Sridhar (2012), it is not clear whether these authors are suggesting that FSI needs to be “immediately and substantially” raised. These works combined together argue that the theoretical and empirical evidence suggests that removing height restrictions can be beneficial for Indian cities.

## Evidence for Increasing FSI

Bertaud et al (2004) thinks that FSI should increase, claiming that with improvements in technology and infrastructure, it goes up in most cities. He argues that increasing FSI will not increase densities and that most people would end up consuming more real estate. However, his claim largely looks at formal housing plus employment, with benefits trickling down to the large section of Indian society that lives in slums. I contend that conditions for housing the urban poor will not improve with higher FSI, unless there are concomitant requirements for affordable housing and impact-fees on new development.

Bertaud and Brueckner (2004) present a “theoretical analysis” with “illustrative calculations” for Bangalore, while recognising the limits to infrastructure supply in the Indian context. The authors argue that as cities expand due to lower FSI, people end up paying higher commuting costs and housing prices. Bertaud and Brueckner (2004) do not use more sophisticated conceptualisations of the city with multiple sub-centres and movement of not just housing, but also jobs to peripheries, but they acknowledge this limitation in their conclusions. They state that using Bangalore as a fit for illustrative purposes makes sense if the theory of their proposed monocentric city model is considered. However, they use parameter values from cities in the United States (US) for the cost calculations. Given that the level of infrastructure supply and institutional capacities are radically different in the US cities, their results should be viewed as an excellent academic endeavour, with limited direct policy applications. Further, their “illustrative welfare-cost calculation” does not account for (1) societal gains

from reductions in emissions of greenhouse gases and particulate matter from shorter trips; (2) gains from living in formal and better housing in the peripheries, especially for the emergent middle class; and (3) benefits from co-location in urban centres with amenities such as better educational centres and healthcare, restaurants, public gardens and so on.

Brueckner and Sridhar (2012) in an extension of this piece, It follows the same theoretical trajectory, and therefore builds on its strengths, but inherits its limitations. In both these peer-reviewed journal articles, there are ample qualifications that highlight the limits of the models. Yet, based on this limited model, Brueckner and Sridhar claim that "...by showing that more-compact cities closer to international FAR norms are better for consumers, saving them money on housing and commuting costs, this paper offers an important addition to Indian policy debates". This extension of theory to applied policy has limits that policymakers should recognise.

### Reframing Planning Strategy

Given the evidence on increasing FSI in Indian cities, this section examines how planning in Mumbai can be reframed as a regional planning proposition. Patel (2013) informs us that higher building densities are being proposed for the suburbs of Mumbai. It would be critical to understand the land use and zoning plans proposed along with increasing FSI. Further, he tells us that higher FSI is being recommended by institutions such as the World Bank, based on expert advice. I am not privy to the World Bank's counsel to Indian planners. If indeed the advice is towards higher FSI, without evaluating the associated reasons for and impacts from constrained infrastructure production, it is extrapolated from limited evidence, and thus a risky proposition.

My research shows how jobs and housing are spatially distributed in multiple sub-centres in the Greater Mumbai Region (Shirgaokar 2012). In general, rapidly growing Indian cities are not just CBDs with decreasing densities towards the periphery, but also include secondary nodal developments that create specific changes to the density gradients. There

are planned sub-centres within the municipal corporation limits of Greater Mumbai, such as the Bandra-Kurla Complex, and outside, such as Navi Mumbai. There are also market-driven agglomerations that have both housing and jobs, such as Vasai-Virar, Kalyan-Ulhasnagar, and Bhiwandi.

I contend that plans for higher densities should include urban peripheral nodes, not just urban cores and CBDs. The potential for managing land uses and supplying infrastructure is higher in emerging urban nodes. Such managed and phased growth, that also encourages a balance between housing and jobs, can help establish multidirectional flows on expensive transportation infrastructure (Cervero 1998). Patel claims that most of the new urban transportation infrastructure is concentrated within the municipal limits of Mumbai, and this does not open up new lands for development. I agree that the supply of transportation infrastructure should be a regional proposition, with a special focus on growing agglomerations – sometimes outside municipal boundaries. The supply of such peri-urban infrastructure should be taken up in the early phase of a region's development, not later after the die has been cast.

FSI is only one of the tools in a planning kit that has zoning, growth boundaries, inclusionary housing, and others. Increasing FSI (say 2 to 4) can work if it is linked to ratios of the mixes of uses – housing, office, retail, recreational and so on. A

location with FSI = 4 with only residential properties may have different crowding than if the same location is planned to be a mixed-use development with residential, office, retail and recreational space. In a city-region with multiple dense mixed-use sub-centres, the flows and demands on transportation infrastructure could make for a lively and workable city-region.

Readers should be mindful that Patel's FSI argument is based on evidence from island Mumbai, which is a special case. Bangalore, which tends to be closer in form to many cities in contemporary India, has been studied in the literature. Though it may not be similar in size or economic potential and growth rates to other cities, it is similar in the spread of urban edges, movement of jobs and housing to secondary nodes, growth of vehicles, and decrease in standard of living. However, neither Mumbai nor Bangalore are similar to other cities that may have a varying supply of infrastructure coupled with limited planning capacity, and different rates of population growth, employment mix, and housing supply.

Unfortunately, with limited data comes limited understanding of problems. For example, Brueckner and Sridhar (2012) rely on aggregate (city/regional level) data to model the effects of higher FSI. In India, coming by data is the bigger challenge compared to running the models, and most research is weak due to such data limitations. With Patel's analysis, crowding is

## Survey

August 27, 2011

### Experimental Economics: A Survey

by

*Sujoy Chakravarty, Daniel Friedman, Gautam Gupta, Neeraj Hatekar, Santanu Mitra, Shyam Sunder*

Over the past few decades, experimental methods have given economists access to new sources of data and enlarged the set of economic propositions that can be validated. This field has grown exponentially in the past few decades, but is still relatively new to the average Indian academic. The objective of this survey is to familiarise the Indian audience with some aspects of experimental economics.

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an interesting metric to measure effects. However, better metrics such as square feet of retail or office space per square kilometre or housing units per square kilometre would make for richer policy analyses. Yet, these metrics are difficult to construct because of data limitations.

Patel's policy arguments for phasing away the Rent (Control) Act, the need for inclusionary housing, and the limits to providing free housing are convincing, and supported in the wider scholarly literature. Where relevant, these ideas need to be included in planning and land development policies. Further, higher FSI should be linked not just with minimum quotas for inclusionary housing per total built area, but also to exactions and impact fees per unit of build space. Such exactions could ideally serve social equity questions with regard to housing for all income classes, and provide city coffers with the resources needed to build infrastructure.

Finally, there is the issue of limited institutional (and technical) capacity that haunts planning in emerging economies. Policy measures such as impact fees for new development and inclusionary housing are great in theory, but in practice can institutions evolve to handle these new developments? Therefore, I contend that the development focus should equally be on improving institutional capacity, along with propositions such as managing FSI.

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