



IDENTIFICATION OF AFFORDABLE HOUSING IN MUMBAI METROPOLITAN REGION AND PUNE METROPOLITAN REGION

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Abstract

The Indian economy is growing at a rapid pace leading to urbanization causing population explosion in metro regions and creating an acute shortage of housing. In addition, the land prices in metro regions have shot up beyond the purchasing power of Middle-Income Groups(MIG) and Low-Income Groups (LIG). There is an increasing demand for the housing units by these groups rates are beyond their affordability. This is resulting into low velocity of sales and high inventory of new housing units. This paper is an attempt to make and define the mathematical relation between ready reckoner rates and actual market rates, to develop an indicator for identification of areas suited for affordable housing projects in Mumbai Metropolitan Region and Pune Metropolitan Region.

Two ratios are developed based on Ready Reckoner Land Rates, Residential Property Rates and Actual Market Rates prevailing in housing sectors in Mumbai Metropolitan Region (MMR) and Pune Metropolitan Region (PMR) to identify places for Affordable Housing based on statistical analysis.

Keywords: *Affordable Housing, Low Income Group (LIG), Middle Income Group (MIG), Ready Reckoner, Market Rates, Percentage Deviation.*

1. Introduction

The Indian Metro regions are growing day by day with current population of around 13 crores people(10.1%). Land speculation and its increasing prices are affecting cost of housing units in metros. Providing affordable housing for low income groups is cited as promising and lucrative site for business investments both by the Government and private sector. “Pradhan Mantri Awas Yojna (PMAY) Housing for All 2015-2022 Mission”-National

Mission on Urban Housing is launched by the Government of India to give emphasis on affordable housing targeting to build two crores dwelling units. A Technology Sub Mission under the PMAY is launched to encourage use of innovative and green technologies and adaption of modern construction methods for faster and quality construction of houses. Credit Linked Subsidy System (CLSS) has been launched by Ministry of Housing and Urban Poverty Alleviation (MHUPA) which extends credit flow to housing needs of urban poor through credit linked subsidy on demand side. The Indian Housing sector underwent major relaxation in norms with 100% Foreign Direct Investment (FDI) on 4th December 2014 to develop affordable housing and meet its rising demands in metro regions. Under the Indian government the MHUPA, National Housing Board (NHB), Reserve Bank of India (RBI) is overseeing the behavior of the economy concerned with the housing sector in India.

The income level of the population has increased but it has no significant effect on affordability the basic need “House” as these prices are also increasing rapidly. However, luxuries like mobiles phones, television, computers have become affordable and are being used by almost all sections of the population. This shift from unaffordable basic needs to affordable luxury items has raised questions over the direction of our nation’s progress [1; 2; 3].

2.Housing Sector in Metro Regions of India

A metropolitan region in India is an area having a population of ten lakhs or more, comprised in one or more districts and consisting of two or more Municipalities or Panchayats or other contiguous areas, specified by the Governor by public notification to be a Metropolitan area[4].

There are 12 metro regions with dedicated governing authority for development of that region. Table 1 gives the ranking of the metropolitan regions according to population.

Table 1: Metropolitan Region in India [5]

RANK	METROPOLITAN AREA	GOVERNING AUTHORITY	POPULATION	AREA (sq. kms.)
1	National Capital Region	National Capital Region Planning Board	46,049,032	34,144
2	Mumbai Metropolitan Region	Mumbai Metropolitan Region Development Authority	20,748,395	4,354
3	Kolkata Metropolitan Region	Kolkata Metropolitan Development Authority	14,617,882	1,851
4	Chennai Metropolitan Area	Chennai Metropolitan Development Authority	8,917,749	1,189

5	Bangalore Metropolitan Area	Bangalore Area Metropolitan Authority	8,728,906	8,005
6	Hyderabad Metropolitan Area	Hyderabad Metropolitan Development Authority	7,749,334	7,100
7	Ahmedabad Metropolitan Region	Ahmedabad Metropolitan Development Authority	6,352,254	1,294
8	Andhra Pradesh Capital Region	Andhra Pradesh Capital Development Authority	5,800,000	8,352
9	Pune Metropolitan Area	Pune Metropolitan Development Authority	5,049,968	3,500
10	Visakhapatnam Metropolitan Region	Visakhapatnam Metropolitan Development Authority	4,200,000	5,573
11	Jaipur Metropolitan Region	Jaipur Metropolitan Development Authority	3,073,350	623
12	Indore Metropolitan Region	Indore Metropolitan Development Authority	2,170,295	390

About 13 crores (10.1%) of Indian population are lives in 12 metropolitan areas and about two crores in MMR with area of 4354sq. kms. Mumbai is the capital of Maharashtra and also the economic capital of India. Pune Metropolitan Region has population of around 50 Lakh people and area of 3500 sq. kms. Pune is 2nd biggest city in terms of population in Maharashtra. It is mainly educational and Information Technology Hub. The main factors responsible for migration to these cities are job opportunities, demographic explosion, poverty, dependency and unpredictable nature of agriculture. The rapid growth of population has put an immense pressure on the housing sector in the metropolitan regions; also, the inability of government to provide housing to the consistently rising population has in turn caused the problems like slum formation, unhygienic living conditions, health problems in slum areas *etc.* The primary reason for slum development is the rocket high prices for land and property in metropolitan regions which has forced the economically weaker sections to occupy shelter in slum areas and live in congestion. Also, it leads to excessive pressure on infrastructure facilities like water, power and public transportation. Thus, there is a huge gap in the demand and supply of housing for the mid and low-income housing segment.

The scope of this study is restricted to the MMR and PMR only. The MMR and PMR are considered as they are top two cities of Maharashtra. MMR real estate market has become stagnant with high level of unsold inventory and low velocity of sales during year 2014-15. Sales in the MMR real estate sector are not likely to see substantial recovery during 2016. This sector growth has to be boosted by time bound infrastructure development such as

increased metro connectivity; Trans Harbor Bridge and the Pinjal River project. With reforms announced under PMAY it becomes essential to study how this sector responds to affordable housing. However, PMR is considered as one of the best real estate markets in India showing steady rate of capital value appreciation. PMR has seen significant rise in real estate since 2011. Unlike other Metro Regions, PMR has been witnessing low volatility in terms of demand and supply over last two years. With rising number of residential plot sales in PMR and rising demand for affordable housing, it becomes necessary to check different areas for affordability within PMR [6; 7; 8].

2.1 Affordable Housing

Affordable housing is explained on the basis of three parameters *i.e.* income level, size of dwelling unit and affordability. Table 2 defines affordability which reference to income levels and size of dwelling units [9; 10].

Table 2: Definition of Affordable Housing [11]

	Income Level INR-Indian National Rupee	Size of Dwelling Unit	Affordability EMI-Equated Monthly Installments
Economically Weaker Section (EWS)	< INR 1.5 lakh per annum	Up to 300 sq. ft.	EMI to Monthly Income: 30-40 %
Low Income Group (LIG)	INR 1.5-3 lakh per annum	300-600 sq. ft.	House Price to Annual Income Ratio: < 5.1
Medium Income Group (MIG)	INR 3-10 lakh per annum	600-1200 sq. ft.	

From Table 2, it is evident that disposable income becomes a key factor in determining the affordability and affordable housing thereby is a term for low- and middle-income groups [12].

2.2 Housing and its Components of Cost

The Cost of Housing in simple terms can be defined as the total cost of a building including its construction cost along with the land cost. The two components of cost of housing unit are; Land cost and Construction cost.

The land cost is the actual price of land purchased to construct the house including the stamp duty and registration charges. Stamp duty and registration charges are the taxes charged by

government and are one of the largest revenue sources for any state government. The government also publishes ready reckoner rates on which the registration and stamp duty are charged. The land cost ultimately depends on the owner of the land and can be greater than the ready reckoner rates published by the government.

Construction cost is defined as the “expense incurred by a contractor for labor, material, equipment, financing, services, utilities, *etc.* plus overheads and contractors profit”. The cost of architectural design, consultant and engineer’s fee are not included in construction cost. The construction cost in simple terms is the cost incurred during the execution phase of a project. The consultancy and engineering cost involve the amount of money spent on the engineering and design of the housing project. Engineering and consultation can also be provided by the contracting firm. In this case, the consultant and engineering cost is included under the construction cost [13].

The construction cost plays an important role in determining the affordability of housing. Use of new low-cost construction techniques like rapid wall construction, pre-engineered buildings *etc.* reduce the construction cost and make the project affordable on mass level; however, exploitation by private developers to increase their profits and providing luxury amenities renders the project unaffordable. A common trend is being seen now a day where the land prices are very high and private developers hike up their profit share by providing unnecessary luxury amenities. The rates of such housing projects are on the higher side and the future of affordable housing in metros is a big question mark. The shortage of housing for the MIG and LIG sections therefore is an inevitable fact.

2.3 Land and Ready Reckoner Rates

The land rates owing to its dependency on various factors like location, type of land, climate, indentation, proximity from markets and important roads is a largely variable concept. The government however does not have a direct control over the land rates and it is up to the owner of the land to ultimately decide the land rates. The government for this purpose defines and publishes ready reckoner land rates every year. The main purpose of ready reckoner rates is to keep a check on land prices and to set a benchmark price for charging the registration and stamp duty on total cost of the land.

Ready reckoner rates are the prices of land, residential properties and commercial properties which are defined and published by the respective state governments in India every year. They are usually referred as the fair price rates laid down by the government over which the builders can charge a premium amount as per his wish. The builder or contractor cannot

quote a price for land, residential building and commercial building which is less than the ready reckoner price. These ready reckoner rates are an important tool for maintaining a benchmark for the charges namely, the registration fees, stamp duty and property tax [14].

The concept of ready reckoner rates can be explained with a small example. Suppose there is a 1000 sq. ft. of land whose ready reckoner rate is 5000 INR per sq. ft. Thus, the total cost of land comes to be 50 lakhs INR. The seller is quoting 60 lakh INR as the price for same land so the stamp duty and registration charges will be calculated on 60 lakh INR since it is greater than the price laid down by government. Suppose the seller decides to sell at 40 lakh INR he can sell but the stamp duty and registration charges will be calculated on 50 lakh INR because it is the minimum price specified by government *i.e.* the ready reckoner price. The stamp duty and registration charge rates vary from state to state and are decided by the respective state governments. The ready reckoner rates are also specified on the basis of locality and survey numbers by the respective state governments and are revised from time to time whenever the state government feels the need to increase state revenue from them. The ready reckoner rates are available on the stamp duty and registrations website of each state government.

2.4 Base Ratio and Market Ratio

Base Ratio is defined as the ratio of ready reckoner price of a residential property to the ready reckoner price of open non-agriculture land in a particular area. This ratio stands as parameter for effect of land rates on minimum possible rates for residential property. Market Ratio is defined as the ratio of actual market price of residential property to the ready reckoner price for open non-agriculture land in a particular area. It considers actual market price of residential property which is inclusive of actual land cost, construction cost and profit of private developer. Difference between Market Ratio and Base Ratio is termed as absolute deviation of Market Ratio over Base Ratio.

The price quoted by the Private Developers over the Ready Reckoner rates is an important factor that discourages the MIG and LIG people from buying houses and residential properties. The lagging towards affordable housing by the developers and builders is further giving rise to the fact that private builders are constantly ignoring the needs and demands of the MIG and LIG sections. Affordable housing is an important part of housing sector development in metropolitan regions and this model is successfully adopted by other developed countries.

3. Comparative Assessment of Market Ratio and Base Ratio for MMR and PMR

Table 5 and Table 6 shows the Ready Reckoner Land Rates, Residential Property Rates and Actual Market Rates collected to calculate Market Ratio and Base Ratio for 20 areas of Mumbai Metropolitan region and Pune Metropolitan region respectively. The Ready Reckoner Rates data has been collected from the website of “Department of Registration and Stamps” of Government of Maharashtra. Ready Reckoner rates for both Land and Residential Property is calculated by taking average maximum and minimum rate given on website for land parcels in that area. Actual Property Rate in an area is calculated by taking average of per sq. ft. prices of top 5 and bottom 5 Projects in that area. The data downloaded on July 27, 2016.

Table 5 Base Ratio and Market Ratio for 20 areas in Mumbai Metropolitan Region [15; 16]

Areas	Ready Reckoner		Actual Market Rates	Base Ratio	Market Ratio	Deviation	
	Land Rate	Residential Property				Absolute	Percentage
	INR/sq. ft.		INR/sq. ft.				
Colaba	21240	42481	56863	2.00	2.68	0.68	33.86
Lower Parel	13698	31603	44421	2.31	3.24	0.94	40.56
Malabar Hill	30358	55168	69163	1.82	2.28	0.46	25.37
Tardeo	12388	23578	45625	1.90	3.68	1.78	93.50
Dadar	7114	14066	46572	1.98	6.55	4.57	231.09
Bandra	16491	24410	60407	1.48	3.66	2.18	147.47
Juhu	16863	28220	47655	1.67	2.83	1.15	68.87
Versova	9061	16161	20353	1.78	2.25	0.46	25.94
Bhandup	5232	9567	14734	1.83	2.82	0.99	54.01
Andheri West	9158	15869	20353	1.73	2.22	0.49	28.26
Malad	5114	10474	14791	2.05	2.89	0.84	41.22
Borivali	5255	10042	19635	1.91	3.74	1.83	95.53
Chembur	6621	11682	17865	1.76	2.70	0.93	52.92
Ghatkopar	6552	11891	20580	1.81	3.14	1.33	73.07
Kurla	4065	7904	17613	1.94	4.33	2.39	122.83
Powai	7890	20892	30004	2.65	3.80	1.15	43.61
Vikroli	4610	9725	17921	2.11	3.89	1.78	84.28
Mulund	6445	11561	21881	1.79	3.40	1.60	89.27
Vile Parle	9605	16765	34843	1.75	3.63	1.88	107.83
Sakinaka	4684	9786	14556	2.09	3.11	1.02	48.74
Average Percentage deviation of Market ratio from Base ratio							75.41

Table 6 Base Ratio and Market Ratio for 20 areas in Pune Metropolitan Region [15; 16]

Areas	Ready Reckoner		Actual Market Rates	Base Ratio	Market Ratio	Deviation	
	Land Rate	Residential Property				Absolute	Percentage
	INR/sq. ft.		INR/sq. ft.				
Model Colony	4593	8927	14319	1.94	3.12	1.17	60.41
Prabhat Road	5514	10276	14799	1.86	2.68	0.82	44.01
Baner	2187	5635	9998	2.58	4.57	1.99	77.42
Balewadi	2184	5576	7546	2.55	3.46	0.90	35.33
Kothrud	2772	8251	11466	2.98	4.14	1.16	38.97
Undri	1716	4782	6269	2.79	3.65	0.87	31.09
Koregaon Park	4563	11961	15530	2.62	3.40	0.78	29.84
Viman Nagar	2407	6067	9919	2.52	4.12	1.60	63.49
Wakad	1313	5272	7876	4.02	6.00	1.98	49.39
Bavdhan Khurd	1920	4969	8665	2.59	4.51	1.93	74.38
Law College Road	5513	10276	14857	1.86	2.69	0.83	44.58
Tathawade	643	4730	8563	7.36	13.32	5.96	81.04
Akurdi	1162	4291	5736	3.69	4.94	1.24	33.68
Bibvewadi	1787	6482	8367	3.63	4.68	1.05	29.08
Pimple Saudagar	1624	5688	6833	3.50	4.21	0.70	20.13
Aundh	2468	7210	8371	2.92	3.39	0.47	16.10
Katraj	1465	4582	5685	3.13	3.88	0.75	24.07
Hadapsar	2021	5192	5650	2.57	2.80	0.23	8.82
Warje	1509	4555	6921	3.02	4.59	1.57	51.94
Punavale	397	3708	5090	9.34	12.82	3.48	37.26
Average Percentage deviation of Market ratio from Base ratio							42.55

The percentage deviation of market ratio from base ratio is actual crux of the impact of land prices on cost of housing and its affordability in that particular area. The deviation of market ratio from base ratio signifies the effect of increasing land prices. More is the deviation, lesser the affordability. This deviation also signifies contribution of land cost in increasing housing rates. It can be observed from Table 5, for Bandra, the Base Ratio is 1.48 and Market Ratio is 2.19, absolute deviation is 0.71 and percentage deviation is 47.79%. This gap signifies that market rate is high due to land price and the housing cost in that area and it cannot be lowered down unless land cost is reduced.

Average Percentage deviation of market ratio from base ratio is 175.41% for 20 areas of Mumbai Metropolitan region covered under this case. It signifies that projects developed in these areas will be sold out in market at 175.41% of their basic ready reckoner residential property rates specified by government. This 75.41% deviation is due to increased land prices in Mumbai Metropolitan region. 8 out of 20 areas have percentage deviation more than

average for the region; these areas can be classified as saturated for affordable housing development. However, if we look at Pune Metropolitan region, the average percent deviation comes out to be 42.55% for 20 different areas. 9 out of 20 areas have percentage deviation more than average for the region, these areas can be said to be on the verge of saturation for affordable housing projects. We can also interpret that land rates in Pune Metropolitan Region are lesser than that in Mumbai Metropolitan region. Land prices are touching sky as very less open non-agricultural land is available for development in market. In order to cut down the cost of housing unit and making housing affordable for MIG and LIG section living in metro regions government should take some steps.

4. Conclusion

Affordable housing in Metro regions is need of time, to achieve PMAY's goal of providing Housing for All by 2022. Comparative assessment of Percentage Deviation of Market Ratio from Base Ratio in MMR and PMR clearly shows that PMR has more opportunities for development of affordable housing projects. The threshold cutoff for Percentage Deviation of Market Ratio from Base Ratio for this case study is considered as 10%. This threshold cutoff for Percentage Deviation of Market Ratio from Base Ratio relates to affordability of residential units. The areas having Percentage Deviation of Market Ratio from Base Ratio less than threshold cutoff *i.e.* <10% are having more scope for affordable housing projects within that Metro Region. In MMR, none of the areas is showing Percentage Deviation of Market Ratio from Base Ratio less than threshold cutoff of 10%. This signifies that land rates in MMR are very high and affordable housing is possible by the help of Government Agencies such as Maharashtra Housing and Area Development Authority (MHADA) and MMRDA. It is highly impossible for any Private Developer to undertake Affordable Housing project in MMR without Partnership with Government Bodies. In PMR, Hadapsar is showing Percentage Deviation of Market Ratio from Base Ratio less than threshold cutoff of 10%. This indicates difficulty in undertaking Affordable Housing Projects for Private Developers in PMR without support from Government.

As per new reforms proposed in Financial Bill 2016-17, cost for affordable housing projects complying to given conditions will be lowered by 15-20%. This reduction compromises of exemption of service tax and deduction of Income tax on 100% profits earned in Affordable housing projects. These reforms can bring down actual market price of housing units completed under PMAY by at least 15%. As Ready reckoner rates remaining the same though out the year, Market Ratio will reduce proportionately. This will eventually reduce

Percentage Deviation of Market Ratio from Base Ratio and more areas will fall under threshold cutoff set for affordability. In MMR, still no areas can be suited for Affordable Housing projects undertaken by Private Developer only. In PMR, areas namely Katraj, Hadapsar, Aundh and Pimple Saudagar areas have potential for affordable housing projects in upcoming year. Private Developers have ample opportunities in PMR to come up with affordable housing projects in partnership with Government under PMAY.

The reform proposing 100% deduction of profits from income tax to Private Developers undertaking affordable housing projects complying with conditions laid by Government can end up enriching Private Developers. The basic condition to avail this benefit is carpet area should be less than 326 sq. ft. in MMR and less than 646 sq. ft. in PMR. A Private Developer can construct small residential units complying with given conditions and can sell it at Actual Market Rate and still avail 100% deduction on Income Tax. There is a high possibility that Actual Market Rates will be beyond the affordability for MIG and LIG. Sales of housing units at its Actual Market Price are core defeat to purpose of Affordable Housing, if Actual Market Price is beyond affordability of MIG and LIG. This reform can end up enriching Private Developers under the guise of Affordable Housing [17].

This method of deciding affordability of housing projects on basis of Percentage Deviation of Market Ratio from Base Ratio has some limitations. This method does not hold reliable in areas where Ready Reckoner Land Rates and Residential Property Rates are very high *i.e.* already beyond the purchasing power of MIG and LIG. This method gives incorrect results in areas where Ready Reckoner Land Rates are very low *e.g.* Punavale area in PMR. This area is located in outskirts of PMR and Land prices for land parcels in that area are suitable for Affordable Housing Projects still Percentage Deviation of Market Ratio from Base Ratio is 37.26%. This method does not sound correct if there is large variation in Land Rates or Actual Property Rates within an area itself.

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