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Analysis of Trends in Property Prices in Selected Indian Cities

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Abstract: *The Indian real estate market is among the most recognised and fastest growing in the world. It is the second largest employer after agriculture and contributes to as much as 9% of the country's total Gross Domestic Product. The paper compares the trends in average property prices of thirty-two localities across eight major Indian cities for the time periods 2016-17, 2013-14 and 2009-10. The 2016-2017 time-periods is then separately analysed since at that time GST was implemented. However, for 2016-17, no significant fluctuations has been found in the trend of prices. Therefore a regression analysis is conducted to see what factors may influence the average property prices in that time frame. The paper has found that the demand-side factors are more influential compared to that of supply-side factors. Finally, a study of the overall impact of GST shows how the cost of inputs into producing real estate have mostly fallen post-GST; home-buyers will be benefited more if they avail ready-to-move-in property than under-construction ones, and the position of affordable housing is better off as opposed to luxury housing under this regime.*

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I. Introduction

Real-estate market acts as an engine of economic growth for a country through its contribution in GDP, employment, overall aggregate demand and other macro economic variables. Similarly, purchase of property constitutes a major portion of the overall expenditure plans of buyers. The importance of a study stems from the fact real estate sector is among the highest revenue earning sectors of India and is expected to touch a growth rate of 30 % over the next decade. Nonetheless, other than all markets, real estate markets are fundamentally different in a sense that the values of properties vary widely across regions, and there are heterogeneous sets of factors in tern affects prices for those regions.

There might not always be a general upward rising trend in property prices as a result of inflation and they may rather be subject to occasional arbitrary down or upswings due to several external and internal factors. Numerous factors could be responsible for such fluctuations in prices. However, in recent years, one of the most important factors could be introduction of the 'Goods and Services Tax' (GST). The presence of a multitude of indirect taxes in India had made its financial environment sufficiently complex. It was a drive to ease this multiplicity and ambiguity in the taxation system that GST was implemented after the Constituent (One Hundred and First Amendment) Bill was passed by the Centre on July 1, 2017. GST subsumes approximately seventeen indirect taxes and is thus expected to bring about uniformity in the tax structure.1 In such way GST not only affects the sales of final property prices but also affects the prices of the inputs. For instance, inputs into the production of real estate are subject to varying GST rates. For the purpose of our study, we have considered three time-periods, since 20172 (mention three time periods)is expected to display a different scenario from the previous two time-periods with the objective to see the trends in property prices. Although the outcome will depend on how implementations GST indeed affected the input market.

Nonetheless, other than governmental policies like GST, there are several factors which, in general, affect the prices of real estate. They comprise both demand side factors like growth rate of working force population, stamp duty rates, percentage of in-migrants, etc. and supply side factors like FDI in investment.(mention other variables) With this in mind the paper intends to observe, how implementation of GST affects real-estate prices or in other words, what overall impact has the implementation of GST brought about in the prices of real estate in 2017? The paper also tried to capture other economic factors that can also affect the real estate prices. Going by the objectives, the paper basically makes a comparative study of the

[1] Stamp duty on property, however, still continues to be levied additionally
[2] The year of GST's implementation

average property prices in selected localities of eight major Indian cities. An attempt is made to see if, in 2017, the implementation of GST has brought about any major fluctuations in the prices. A further study is conducted to analyse what other factors might have affected 2016-17 prices of real estate. Finally, an analysis of the overall impact of GST on the Indian real estate market is considered.

II. Literature Review

The real estate sector of India being an important area of study has attracted several research projects. The Annual 2017 Handbook of the Indian Real Estate Sector analyses a time series data from 2010 to 2016 for the annual launches and sales of property in some of the major Indian cities. It also includes a study on office market realty trends. It further analyses the impacts of various government policies like the Real Estate Regulation Act (RERA) in 2016 and the passing of the Union Budget in 2017. It foresees that the Act would bring about stability and order in the Indian financial system. Similarly, Frank (2016) made a comprehensive study of the real estate scenario of eight major cities of India. It analysed the sales pattern in these cities and incorporated the impact of the major "game changers" of 2016, namely, the schemes of demonetisation, RERA and the Benami Transactions Amendment Act. It has anticipated that these policies of 2016 would pave the way for GST's implementation of GST in 2017, and a combination of these milestones of these two years will lead to sustainable growth for the economy. In the similar line Chaturvedi & Sharma's (2015) studies the real estate trends amidst India's booming infrastructural scenario. It uses secondary sources of data like educational publications, infrastructural sector magazines, etc. Its concluding note was that the long-term demand drivers for real estate in all sectors of India are positive. On the other hand, Narendran (2013) tried to examine the differences in residential property prices across different cities in India. The paper examined secondary data published by the Reserve Bank of India and by the National Housing Bank. A panel of 15 cities was constructed and time series data since 2009 was made use of. It laid a stronger emphasis on the supply-side factors determining property prices and also found how house price growth significantly varied across the cities Bengaluru, Chennai,Delhi, Mumbai, and Pune.

Contrary, a paper written by Sandbhor, Bapat &Chaphalkar (2013), "deals exclusively with the trends in real estate prices of Pune and the factors affecting the same. It analyses time series data from 2005 to 2012 and found an outward growth pattern in real estate, with a decreasing pressure in the centre. The paper by Eze & Lim (2013), examined the factors that affected an investor's decisions regarding the purchase of real estate. For this research, both primary and secondary data had been used. Primary data included questionnaires, observations, interviews, case studies and portfolios while secondary data comprised company records or archives, government publications, etc.

There have also been papers on the impact of the introduction of GST on real estate. Sheth (2017) has made a comparative study on the pre and post-GST rates of indirect tax on a variety of inputs into production, input tax credit implications and other particulars like pre-registration period credit, matching of invoice, etc. It concluded that GST would be inflationary in the short run and if business houses do not ass on the input tax credit to final consumers, the perceived advantages of GST on Indian real estate would prove to be illusionary. Dubey, Kumar & Pandey (2017) on their paper tried to make an enquiry into the basics of GST, explore the current scenario of India's real estate sector and analyse the effect of GST on the latter. The paper is a descriptive study founded upon secondary data collected from journals, articles, newspapers and magazines. It concluded that GST, as a whole, would be easier to work with and despite an initial slow down in the pace of growth in the short run, it will lead to better results in the long-run.R. & Biswas (2016) in their paper "Impact of GST On Indian Real Estate Sector" also made a similar analysis based on secondary data. It studied how the implementation of GST would impact the pre-existing indirect taxes: service tax, VAT and stamp duty. While the first two would be subsumed under Central and State GST respectively, stamp duty would continue to be levied. This paper presents a final view that the cost of under construction residential units will increase post GST, and that it"will be a hefty blow to industry, which is already suffering from slow sales. While Dani (2016) made ageneral study on GST, by enquiring why GST would be beneficial for some sectors while not in others. Contrary to most proposals, this paper puts forward the view that the GST regime. Harjai (2016) decomposed the real estate sector into its several components and compared the pre-GST indirect taxes like service tax and VAT with three different GST rates, 18 %, 12 % and 5 %, separately for the following common set of variables: land cost, construction cost, net cost, profit, basic sale price and output tax on sale.

III. Methodology

For the purpose of the study, a sample of eight major Indian cities has been purposively selected on the basis of their representation of North, South, East, West and Central India. The cities are: Ahmedabad, Bangalore, Chennai, Delhi, Hyderabad, Kolkata, Mumbai and Pune. For each of these cities, four localities have been chosen by the method of random sampling. The time periods considered are 2009-10, 2013-14 and 2016-17. Average prices of real estate in the three time-frames have been taken into account. 2017 was the year GST was implemented. The time period 2013-14 is representative of the recent past and that of 2009-10 brought into picture a snippet of the last decade.

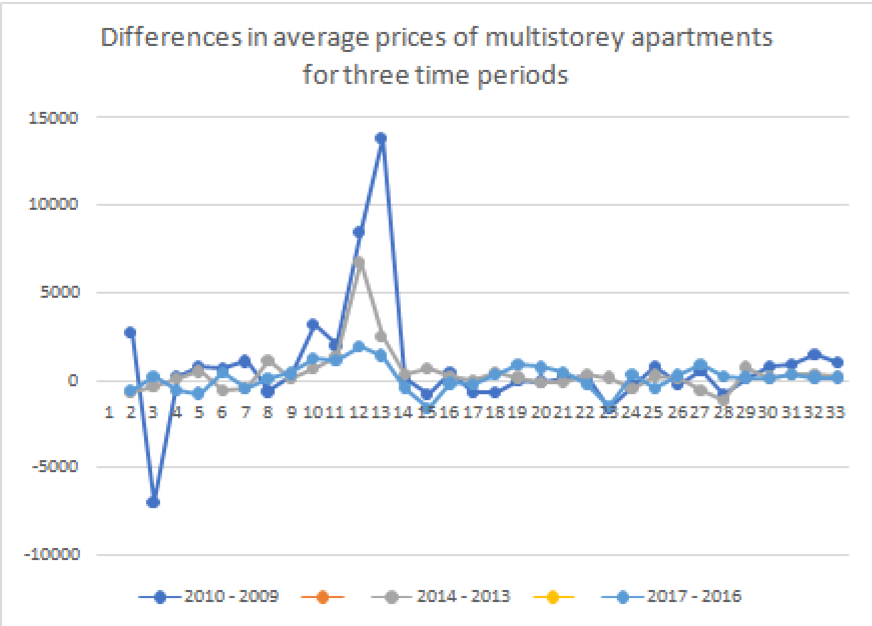
With the help of graphical representation (in the form of a line diagram of the trends in average prices of real estate across three time-periods), chi-square test (to compare the means of the independent samples i.e., average prices of the localities considered) and regression analysis the paper tried to figure out the most significant factors affecting property prices in these cities. In order to do so, the differences in the average prices of property is considered, that is, the observed frequencies used for the three columns of the chi-square analysis are: 2017 minus 2016 prices, 2014 minus 2013 prices and 2010 minus 2009 prices. Cross-sectional data (for the time period 2016-17) has been used for the regression analysis.

IV. Analysis

On the basis of the aforementioned research questions, there are three parts of the analysis which are discussed as under:

First:

A comparison is made among the differences in average property prices of real estate in thirty-two localities of eight major Indian cities, for the year groups 2016-17, 2013-14 and 2009-10. The largest component of the real estate sector being the housing or residential segment, it is this segment that is considered. From within the residential segment, this paper concentrates its scope on the trend in the average prices of multi-storey apartments. The reason for this is that multi-storey apartments cater to a much wider range of customers than other segments of residential real estate, namely residential house or a builder floor apartment. Thus, the effect of GST on this particular segment is expected to be more indicative of the overall picture. An attempt is made to see if there are noticeable price fluctuations in the time period that includes GST, that is, 2017-2016.
A chi-square analysis is made to compare the means of the average property prices for the three time-periods. Deviation in prices within one year in these three cases is significantly different.



As can be seen from the diagram, the fluctuations in the average prices of property was **the least** in the 2016-17 time-frame, contrary to what was expected. This indicates that despite the implementation of GST, its effects could not be felt in 2017. The most likely reason is that it takes a considerable amount of time for a major macroeconomic policy like GST to make an observable impact. The next segment attempts to find the reasons for the stable trend in 2016-17 prices.

Second:

There are several factors that might have affected the prices of real estate in the time-period 2016-17. The ones considered in this paper are population growth rate, stamp duty, growth rate of worker population ratio, percentage of migrants in the cities and FDI in the construction sector. An increase in the population growth rate is expected to lead to an increase in the demand for commodities, including that of real estate.

Stamp duty is one of the indirect taxes not subsumed under GST. Levied as a proportion of property prices, it has a direct impact on the demand for real estate. Work force participation rate (WFPR) is defined as the number of persons employed in usual status per 1000 persons. (The Usual Status approach to measuring un/employment uses a reference period of 365 days i.e. one year preceding the date of the survey of NSSO for measuring un/employment.) This is also considered to be deterministic of property prices because a major portion of working-age adults have high demand for real estate. The percentage of in-migrants in the cities may also affect the demand for property. The supply side factor considered in this paper is foreign direct investment (FDI) in the construction sector.

A regression analysis is then done with the dependent variable being the average property prices of the thirty-two localities of the eight cities considered. The independent factors are the ones discussed above.

The regression model can be expressed as:

$APP_i = \infty + \beta_1 PG_i + \beta_2 SD_i + \beta_3 \, GR_i + \beta_1 MG_i + \beta_5 FDI_i + \in_i$ (1)

Where, APP shows the Average Property Prices for the respective cities. PG shows the growth rate of Population for the respected cities, SD shows the amount of Stamp duty, GR represents the growth rate of WFPR. Whereas, MG represents the % of in-migrants to the respective cities, and finally FDI shows inflow of FDI in the construction sector. Finally $\in$ shows the error term or the unobserved term with zero-mean error variable.

Table 1: ANOVA result

Model	Sum of squares	Degree of Freedom	F	Significant
Regression	12738422.88	5	1.07	.04
Residual	61373876.58	26		
Total	74112299.46	31		

The regression results displayed in table 2 , is a good fit as the level of significance is less than 0.05. Among the independent variables considered, the only two variables found to be significant are stamp duty and growth rate of the work force population. This might explain why the curve representing 2016-17 prices was the most stable. The result depict the fact that there exists an inverse relationship between property prices and stamp duty , while and a positive relationship with the growth rate of WFPR.

Table 2: Regression result

Stamp duty	-1213.71*
Growth rate of work force participation	224.15***

∗∗significant at the 5% level and ∗significant at the 10% level.

However, the crucial question is why the other variables did not significantly affect the average property prices? Population growth rate could not be directly linked with an increase in the demand for property because there is a time lag involved in the new population reaching adulthood and demanding housing facilities. The percentage of in-migrants not affecting the demand for real estate might indicate that the migrants opt for rented apartments or houses rather than buying new property. The supply-side variable considered, FDI in the construction sector, takes into account foreign influences making it a much more macroeconomic and widespread factor, which did not seem to directly affect a much narrower scenario of property prices in the selected localities of Indian cities.

Third:

The overall impact of GST on real estate can be deciphered by looking into its impact on the following specific categories:

Inputs of production:

Before the implementation of GST, indirect taxes levied on cement was at a rate as high as 27-32 %. Although it was expected to reduce to 18-20 % post-GST, current records by Cement Manufacturers' Association state that it will stick to the 28% level. When it comes to transportation costs, however, these constitute 20-25% of the total revenues of such companies. As a result of GST, the transit time and the number of warehouses have reduced and so have the interstate barriers. This has resulted in lowering transportation costs, and hence improved margins.

The production cost of steel has only slightly reduced as a result of a GST rate of 18% as against 20% indirect taxes in the pre-GST scenario. However, there is an estimated 40-45 % saving on time taken for the movement of goods. Some other inputs whose prices have decreased post GST are ready mix concrete (from 23.92 % - 26.93 % to 18 %) and sand lime bricks/ fly ash bricks (from 25.81 % to 18 %). The costs of cement bricks and work contract services, however, have increased. The following table 3 and 4 lists these changes in input prices pre and post GST:

Table 3: Tax incidence on input cost- Pre & Post GST

Material	Pre-GST			Post-GST	
Cement	Excise duty	MVAT	Octroi	Effective rate*	Effective rate**
Iron & Steel	12.5%	13.5%	3% or 5%	31.52% or 34.71%	28%
Ready Mix Concrete	12.5%	5%	3% or 5%	21.67% or 24.62%	18%
Cement Bricks	12.5%	6%	5.5%	25.81%	28%
Sand Lime Bricks/ Fly Ash Bricks	12.5%	6%	5.5%	25.81%	12%

Source: N.A SHAH Association LLP,*Cenevat Credit of input, **Credit of input tax fully available

Affordable Housing Scheme:

The government, on February 7, 2018, asked builders not to charge any GST from home buyers, as the effective GST rate on almost all affordable housing projects is eight per cent, which can be adjusted against the input credit. It mentioned that builders could levy GST on buyers of affordable housing projects only if they reduced the apartment prices after factoring in the credit claimed on inputs.

In its last meeting on January 18, 2018, the GST Council had extended the concessional rate of 12 per cent GST, for construction of houses under the Credit-Linked Subsidy Scheme (CLSS) to promote affordable housing, which has been given infrastructure status in 2017-18 Budget. The effective GST rate, however, comes down to eight per cent, after deducting one-third of the amount charged for the house/flat, towards land cost. This provision was effective from January 25, 2018.

Luxury Housing Segment:

In the case of luxury properties, the basic construction cost may come down a little, but as the input tax credit is limited to 12 per cent only, it will not be able to bring down tax liability to the lowest as taxes are paid on other expenditures also. A different viewpoint is that prices will swell by 5-7% depending on the type of project. This is because while things of mass consumption would be taxed at the rate of five per cent, many luxury items would be taxed at 28 percent.

Reverse charge mechanism on construction costs:

Under this segment, a registered person has to pay GST on the services and goods that are availed from a person who is not registered under GST. Also, the tax payable under the reverse charge mechanism cannot be adjusted against the input credit available from the GST paid on the inputs but has to be paid by cash/bank payment. Developers are adversely affected under this scheme. They have to pay GST on services availed, like those provided by a person who falls in a non-taxable area. Further, they have to pay GST on the services provided by government or local authorities, like municipalities, etc under this scheme. This will increase the cost for developer (especially the small developers) as they were procuring goods and services from unregistered suppliers earlier andfor that they had not the same tax liability as in thecase now.

To summarize, let the words of Shrikant Paranjape, president of CREDAI Pune Metro, be quoted, “The impact of the GST on property prices, will be difficult to gauge at this stage because of the lack of clarity on abatement for land value. In a product, where the major raw material is not covered by the GST and the completed unit is also not covered by the GST, the tax input benefit will be hard to calculate or justify. Only the market forces, the ready reckoned rates and time, will decide whether and how much benefit will be passed on by the developers to the purchasers.”

Moreover, the prices of input materials can also be volatile. Cement and steel prices can soar, without warning. Similarly, sand is always in short supply and not available in the monsoons. Hence, it is likely that these industries may not pass on the entire benefit of tax credit.

Another important factor that needs to be examined is the stage of construction. If the project is at an advanced stage, where substantial cost has already been incurred before the application of the GST, very little input credit will be available and very less benefit will be passed on. If the project is at an early stage, more benefits can be passed on.

There are also cases where GST will not be levied. For instance, if the Occupancy Certificate for the project has been received, then, no GST will be applicable.

V. Findings and Conclusion

The introduction of GST was one of the most revolutionary steps taken in the financial history of India. Having been implemented in the middle of 2017, it initially created a lot of confusion in the decision-making plans of both consumers and producers, including those relating to the purchase of real estate. Different inputs into production were taxed differently, ready-for-sale and under-construction sites had separate GST rates, affordable and luxury housing was under distinct tax slabs and so on. It was thus expected that there would be visible fluctuations in the trends in average property prices in the 2016-17 time-frame. However, opposite to what was anticipated, a comparison with the price trends of 2009-10 and 2013-14 shows that the one of 2016-17 was the most stable. This could be because a measure as extensive and profound as GST would take a considerable amount of time to take flight and show visible results. Despite the fact that service taxes and VAT has been subsumed under Central GST and State GST respectively, many producers with limited financial literacy continued to go along the old tax routes while some mingled both. However, 2016-17 displaying not only stable but also the most stable trend led to a further consideration of the factors that might have led to this result. It was seen that there were only two factors that significantly affected property prices in 2016-17, namely, the stamp duty charged and the growth rate of the working force population. The other factors like population growth rate, the percentage of in-migrants and FDI in the construction sector did not affect the average property prices. Thus, it was the demand side factors that affected the prices more. With regards the final segment of the paper, it could be seen that most of the inputs into production had a lower tax rate post-GST than pre-GST. Home-buyers, despite facing a higher tax incidence, will benefit under the input tax credit system for ready-to-move-in apartments. Affordable home buyers would benefit more than luxury home-buyers. Under the reverse charge mechanism, developers would be adversely affected. In the pre-GST scenario, builders were charged for Central Excise Duty, VAT and entry taxes collected by the state on construction material costs earlier. Additionally, they were to pay a tax of 15% on services like labour, architect fees, approval charges, legal charges etc. Under the GST regime, the overall construction costs would go down. A system of input tax credit is expected to improve overall profit margins.

To conclude, although the sudden implementation of GST was proved to be rough for some sectors, resulting in a slow-down or a potential stagnancy in the short-run, these changes is expected to bring about consolidation in this sector in the long run. Thus, a more visible and comprehensible macroeconomic impact of GST can be analysed only with time.

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