

# Impact of MRTS on Real Estate Prices: an Analysis of Residential and Commercial Properties in Faridabad

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## ABSTRACT

*Building a MRTS project in any city generally expected to have positive impact on property values. The MRTS system enables a high level of commuting from residence to work and other activities for customer and household and employees. It offers the most reliable, safe, and fast option of commuting. Faridabad has been witnessing the rapid growth in urban area due to the introduction of Metro Rail system in 2015. Even though, the smallest change in the urban development affects the real estate price of residential and commercial property. The properties which are in close proximity to MRTS station area are in high demand in real estate market as the location become more attractive and they enjoy benefits from saving in travel time. The impact of MRTS has been studied by many researchers across the world but there are few studies in India on the effects of real estate. This study focus on analyse the impact of Mass Rapid Transit system (MRTS) on residential and commercial property of Faridabad City. The analysis of land value was done of residential and commercial properties with or without metro connectivity of year 2010-11 to 2019-20. Ten year circle rates/ collector rates were considered for calculations of commercial and residential properties land values. The result displays the possible advantage of accepting public finance and boost TOD planning to maintain MRTS in long term. The study further suggests that there was positive impact on the property prices of the sectors around MRTS station.*

**Keywords:** MRTS, Collector rate, Real Estate, Commercial, Residential

## I. INTRODUCTION

The urban population in India is increasing at a very fast pace. After Independence, the migration of population to urban areas was high due to industrialisation. The rapid urbanization is due to the concentration of economic opportunities in cities. Due to the complex relationship between humans and the physical environment, land-use patterns are becoming increasingly complex and fragmented in cities. Among the many factors that impact sustainable urban development are land-use and transit planning. "Over the last decade, Mass rapid transit system (MRTS) development has been booming in urban India. The State government considers metro rail not only as a solution to tackle pollution and traffic congestion from cars, but also a stimulant to promote urban development and regeneration" (Xu, Zhang, & Aditjandra, 2016). Metro rail as an efficient MRT system in any city help in sustainable growth by encouraging use of rail transit system and reduce the use of private car. The location of station area is an essential consideration for any neighbourhood and influence the uplift in property values. The real estate market is influenced by the combination of factors such as physical attributes, landuse, accessibility and surrounding environment (Berawi, Miraj, & Perdana Miraj, 2020).

There have been significant investments in the MRTS project in the city as the Delhi metro connecting Faridabad city was made functional on 6th September 2015. The presence of the Metro rail in Faridabad has helped in expanding the footfall, aside from making the place more liveable and fit for commutation, which additionally promotes real estate development. Alongside the process of property development, the Delhi Metro is also contributing to the rise of real estate prices in the city.

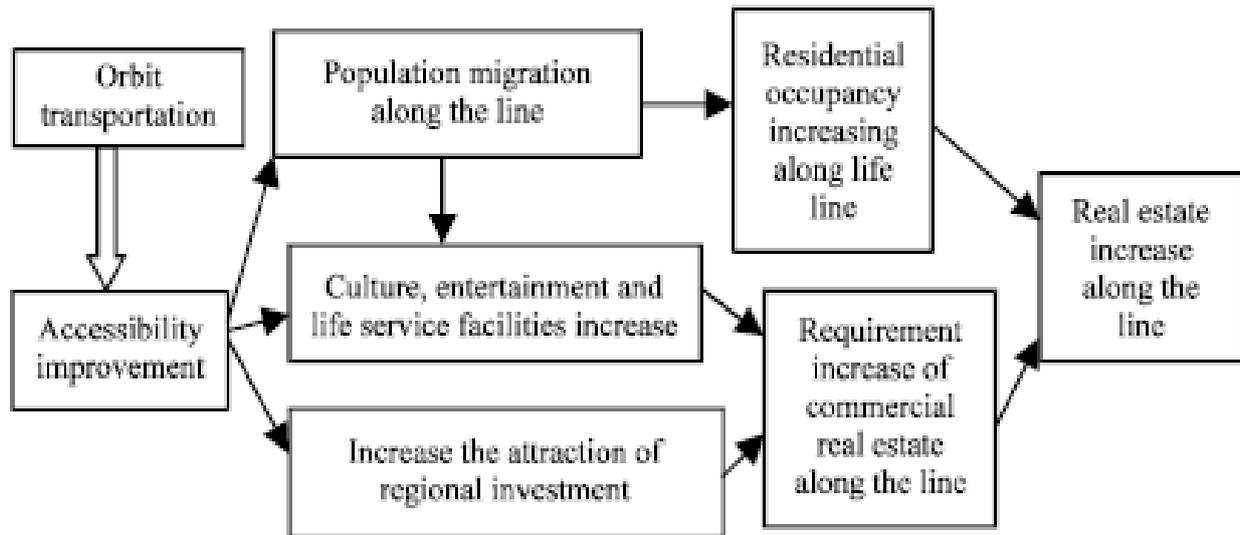
"A study done by the Centre for Environment, Planning and Technology (CEPT) in Ahmedabad highlights that a metro station in the locality pushes up prices by at least 22%". "The impact of the Delhi Metro on real estate can be seen in three phases including the pre-construction phase (1990-96), the under-construction phase (1996-2000) and the post-construction phase (2001-06). The values of proximate land which are within the walking distance from the metro station have significant impact due to enhance in the quality of public transport of a city. It is found that property rates jumped significantly after the Delhi Metro began operations, although there was only a slight increase in the value in the two previous phases" (Joshi, Joseph, Pate, & Darji, 2017). MS Excel software is used in analysis of the rates of the commercial and residential properties of the Faridabad city. Studying the impact of MRTS on real estate prices will support the Haryana government's progressive plan to realise their rail transit city and help in development of transit zone along metro rail system. The finding also expected to make improvement to the body of knowledge of real estate, architecture and urban planning.

## II. LITERATURE REVIEW

The study aims to explore the role of Faridabad metro on property prices. There is a strong relation between accessibility and land price in economic theory. It further suggests that the improvement in road conditions and public transportation tends to increase in

land values (Li, Chen, & Zhao, 2017). Improved transport infrastructure helps in accessibility within city and outside movement of peoples and reduces the traffic congestion. “Worldwide many scholars have explored the relationship between urban transport (BRT, MRT and LRT) and residential property values” (Jiao, 2019). The expansion of MRT is in its initial phase (construction work is going on) in India, so the impact of MRT or BRT is not being explored yet. The basic theory on real estate prices states that due to certain addition to the urban areas, the location become more attractive and demand of the land increases and it pushes prices up (Debrezion, Pels, & Rietveld, 2006). Before opening of the urban mass transit system, peoples have high expectations of accessibility and hike in property values (Jiao, 2019). This expectation change over time and can be seen in the property values over a period of time.

One of the main method that people understanding the value of property is through collector rates applicable for registration of the property. The collector rate generally differs from the market value of the property. It is the minimum price that people has to pay to the government for registration and transfer of property. “These rates are an indicator of likely prices of properties in various areas. A property has to be registered either on the actual transaction value or the minimum rate set by the government, whichever is higher. The market rates of properties in India are usually higher than the collector rates, in rare cases, where the actual price paid by a buyer is less than the circle rate, the property has to be registered based on the circle rate” (Sharma A. K., 2014).



**Figure 1: Diagram of the impact of urban transit on the real estate value, Source: (Hong-Ping, 2014)**

“Metro’s impact in terms of conversion of; residential to apartments, to mixed use and residential or mixed to commercial and new development on open/ vacant land. Land parcels have amalgamated to take leverage of permissible higher development opportunities in terms of FSI and building heights” (Randhawa, 2012). The Delhi NCR Residential Real Estate report stated that “Faridabad, the new and emerging hub of the NCR (national capital region), received a new lifeline in the form Delhi metro rail and offering connectivity within Faridabad” (Naidu, 2015 ). According to Delhi NCR Residential Real Estate report “MRTS in Faridabad will also positively impact the price of property, which has been stable in the last few years while many ready to move in properties in Faridabad are showing trends of marginal decline” (ICICI, 2015). “Also according to (Gu, 2010), the impact of metro on the cost of low income group residential properties are higher than that of high income group residential properties in terms of the premium they provide” (Malhotra, Rastogi, & Paul, 2020). The main focus of this research paper is analysis of impact of MRTS on commercial and residential prices. The literature indicates that the impact of Metro stations on property values varies due to several factors, i.e., the presence of parking area on the metro stations, connectivity with bus stop, connectivity with Indian railway and connectivity with multi modal transport. “The extent of property value increase appears to be affected by the market penetration of transit in the respective area” (Roderick B. Diaz Booz Allen & Hamilton Inc. Mclean, 1999). The influencing factors of real estate value are location factors, neighbourhood factors and structural factors.

### III. METRO RAIL IN FARIDABAD

District Faridabad came on the map of Haryana State in August 1979. Faridabad is an important city of National Capital Region (NCR) has strong linkages with Delhi (DTCP, 2014). It covers a total development plan area of 156.76 km<sup>2</sup>. Being part of the National Capital Region, the city has also seen rapid growth in population, fuelled by an inflow of migrants from other parts of the country. This satellite town was strategically planned to relieve the population growth pressure of Delhi and to decentralize the location of industries. Metro has become the necessity of all the million plus cities in India to fulfil the gap of transit infrastructure. MRTS projects are providing the foundation to efficient, quick, reliable and comfortable transportation (TCPD, 2014). The extension of Delhi metro from Badarpur to Faridabad was approved in December 2007 (hmrtc, 2014) and the first phase of 13.79 km consisting of nine stations was made operational on 6th September 2015 (TMRG, 2015).

Further the line was extended 3.3 km from Escort Mujesar to Raja Nahar Singh in Ballabgarh on 19 November 2018 (Nag, 2018). Two stations were added in this extension, making a total of eleven metro stations in Faridabad. The development of real estate in Faridabad demonstrates how much a transportation system contributes towards the success of any region's real estate market.

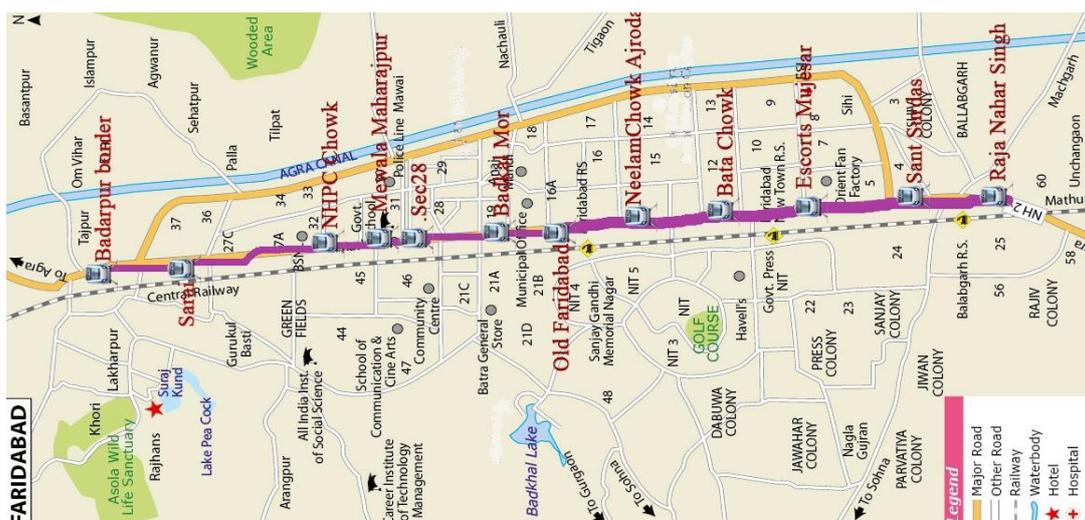


Figure 2: Faridabad Metro Rail Network (Source: Author)

#### IV. ANALYSIS OF COLLECTOR RATE

The circle rate or collector rates are the value used for the purpose of registration of land and properties. They are the minimum rates required for payment of stamp duties. The collectors of the concerned district notify these rates every year. In this research paper, the collector rates of year 2010-11 to 2019-20 are used to assess the impact of MRTS on property value. Government of Haryana through District Collector determined these rates for the purpose of registration of immovable property. As I mentioned that the Delhi Metro became operational in 2015 in the Faridabad city, so the collector rates from 2010 to 2019 (consist of 5 year before the start of Metro system and 5 year after the metro system) were considered for analysis. Microsoft Excel software is used in analysis of the rates of the commercial and residential properties of the Faridabad city.

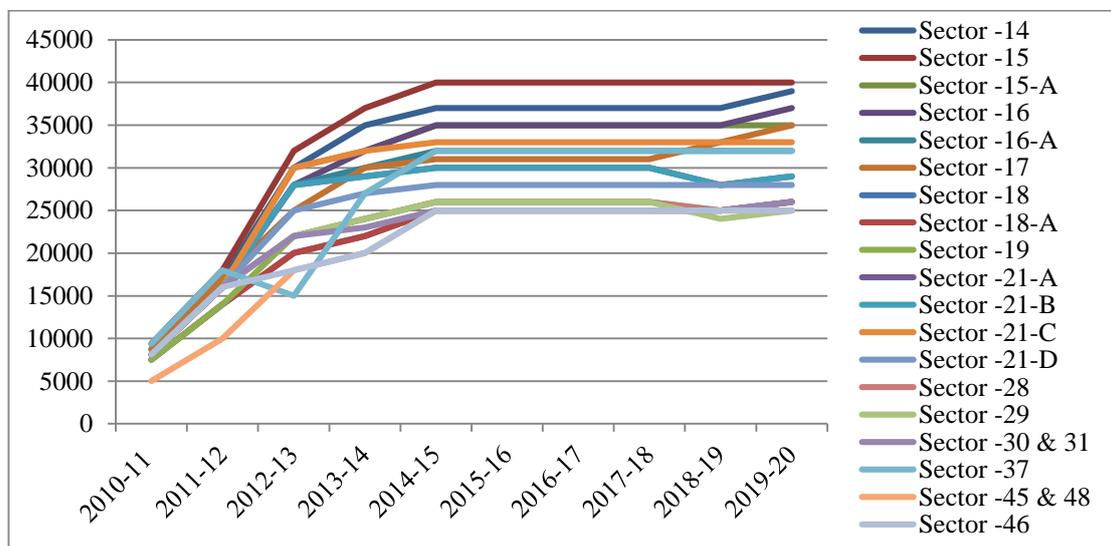
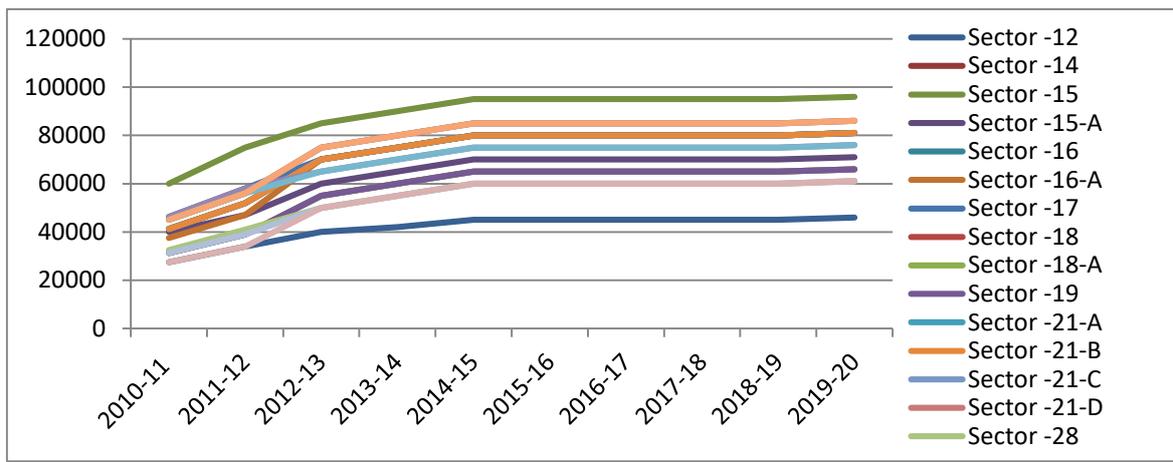


Figure 3: Residential Property (Planned Sector) Collector Rate

The above figure indicates that residential property collector rates in Faridabad city were increasing at a fast pace from 2010 to 2014 but remained steady since 2014-15 to 2019-20. The residential sector no. 15A, 16A, 19, 28, 31 and 37 are in close proximity to metro line. The sector number 45, 46, 21A and 21B are also in close proximity to National Highway and Indian Railway line.

There has been a substantial rise in the collector rates in the year 2011, 2012, 2013 and 2014 to keep the market rate and collector rate more in line with each other. The average residential property rise has been upto 17.46 percent in the sector during 2010 to 2020. The appreciation of collector rate ranges from 25.21 percent to 37.97 percent in the year 2010 to 2015. The collector rates indicate that the metro transit system has substantial impact on residential property rate depending upon the location and the micro-market's overall potential.

The positive changes has been notice in the real estate market due to presence of MRTS in Faridabad and this positive changes has impacted the land values. "This is because these areas become instantly accessible & connected to the rest of the areas along the metro line". MRTS in future will also improve the housing and commercial building demand in close proximate localities because it reduced commuting costs and a higher convenience to users.

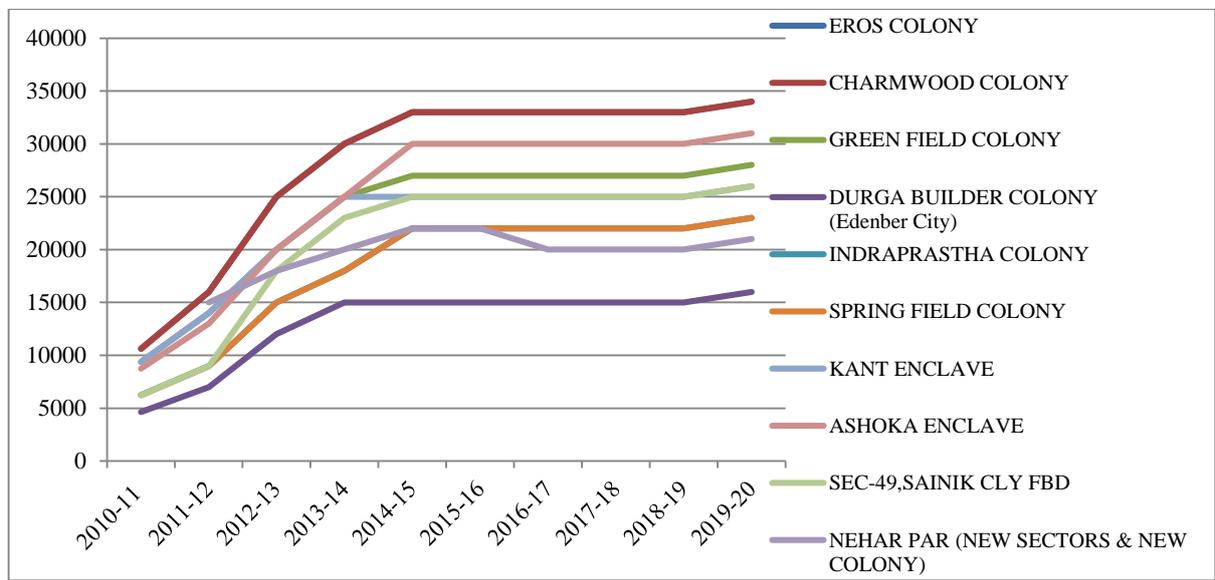


**Figure 4: Commercial Property (Planned Sector) Collector Rate**

The above figure indicates that the there has been a significant rise in the commercial property collector rates in year upto year 2014 to keep in line with market rates. The sector no. 12, 15A, 16A, 19, 28, 31 and 37 are in close proximity to metro line. The sector number 45, 46, 21A and 21B are also in close proximity to National Highway and Metro line.

The collector rates indicate that the metro transit system has impact on commercial property value. The circle rates are decided by the authority to keep it in line with market rates and the market rates are dependent on demand and supply. The commercial property rates have risen from 9.63 percent to 16.89 percent from 2010 to 2015 and from 4.81 to 8.29 percent from 2010 to 2020. The collector rates indicate that the metro transit system has substantial impact on commercial property rate depending upon the location and the micro-market's overall potential.

MRTS brings a positive change to the area which affects land values, because of accessibility & connectivity to the rest of the areas along the metro line. MRTS in future will also improve the commercial building demand in close proximate localities because it reduced commuting costs and a higher convenience to users.

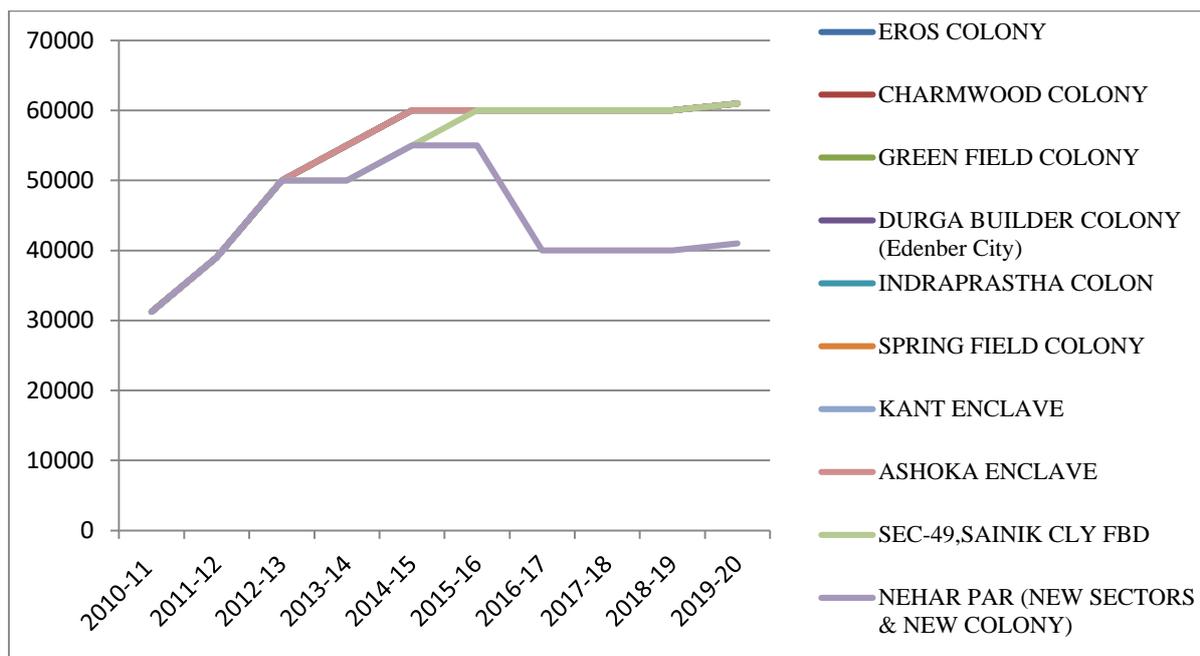


**Figure 5: Residential Property (Private Developer Colony) Collector Rate**

The above figure indicates that the there has been a significant rise in the Residential Colony (Private Developer) collector rates upto year 2014 to keep in line with market rates. The gradual rise in collector rate has been notice in 2019-20. The collector rates indicate that metro transit system has a significant impact on private developer residential colony. It has risen annually from 7.96 percent to 31.95 percent in 5 year from (2010-2015) and from 3.42 percent to 15.32 percent in 10 year (2010-2020).

The properties in most of these private developer colonies having builder floor apartments. As seen in the figure above, the collector rate of these colonies were not increases or remain stagnant in year 2014-2018. The gradual rise in property collector rate has been

notice in 2019-20. The land price in the private developer developer colony increased due to rise in the demand of homes as the metro connectivity reduced the commuting costs and provides a higher convenience to users. The collector rates indicate that the metro transit system has positive impact on residential properties as the home demand increase in the area proximity to metro.



**Figure 6: Commercial Property (Private Developer Colony) Collector Rate**

The above figure indicates that there has been a considerable rise in the commercial property (Private Developer) collector rates from year 2010 to 2014 to keep in line with market rates. The gradual rise (2.75 percent from 2010 to 2020) in property collector rate has been noticed in the Nehar Par (New Sector and Colony) area. The newly developed sectors (sector 66 to 89) witness a reduction in collector rate from Rs 55000 to Rs 40000 in year 2017-18 as the area is far away from metro and the demand of residential property increases in the residential colony proximity to metro. In the first five years (2010-11 to 2014-15) the enhancements in collector rate noticed from 11.97 percent to 13.94 percent annually.

Reduction in the gap between circle and market rates means that the city becomes less attractive for those who are seeking to offload unaccounted funds, and because more attractive for genuine buyers (Sharma A. K., 2014). Increase in circle rates impact the valuation of official property that tends to rise and thus buyers have to arrange for higher stamp duty payable on the registry amount. Appropriate infrastructure development will boost the real estate market in Faridabad. The first step of MRTS development has been taken, while the rest is expected to follow.

The above table data indicates that there has been a significant rise in the residential property (Urban Village) collector rates up to from year (2010 to 2014) to keep in line with market rates as the market rates were higher than the collector rate. The property price remains stagnant from 2014 to 2018. The gradual rise in property collector rate has been noticed in 2019-20. The collector rates indicate that the metro transit system has positive impact on urban villages' residential properties as the home demand increases in the area proximity to metro.

As shown in figure 7, the property collector rate of residential property (Urban Village) increased from 20.01 percent minimum to 34.96 percent maximum annually in the year 2010-11 to 2014-15 and in long term it increased from 9.55 percent to 16.18 percent annually from 2010 to 2020. The land price in the urban villages increased due to rise in the demand of homes as the metro connectivity reduced the commuting costs and provides a higher convenience to users. This constant rise in the price is observed from as soon as metro line is announced to when the line becomes operational (TMRG, 2015).

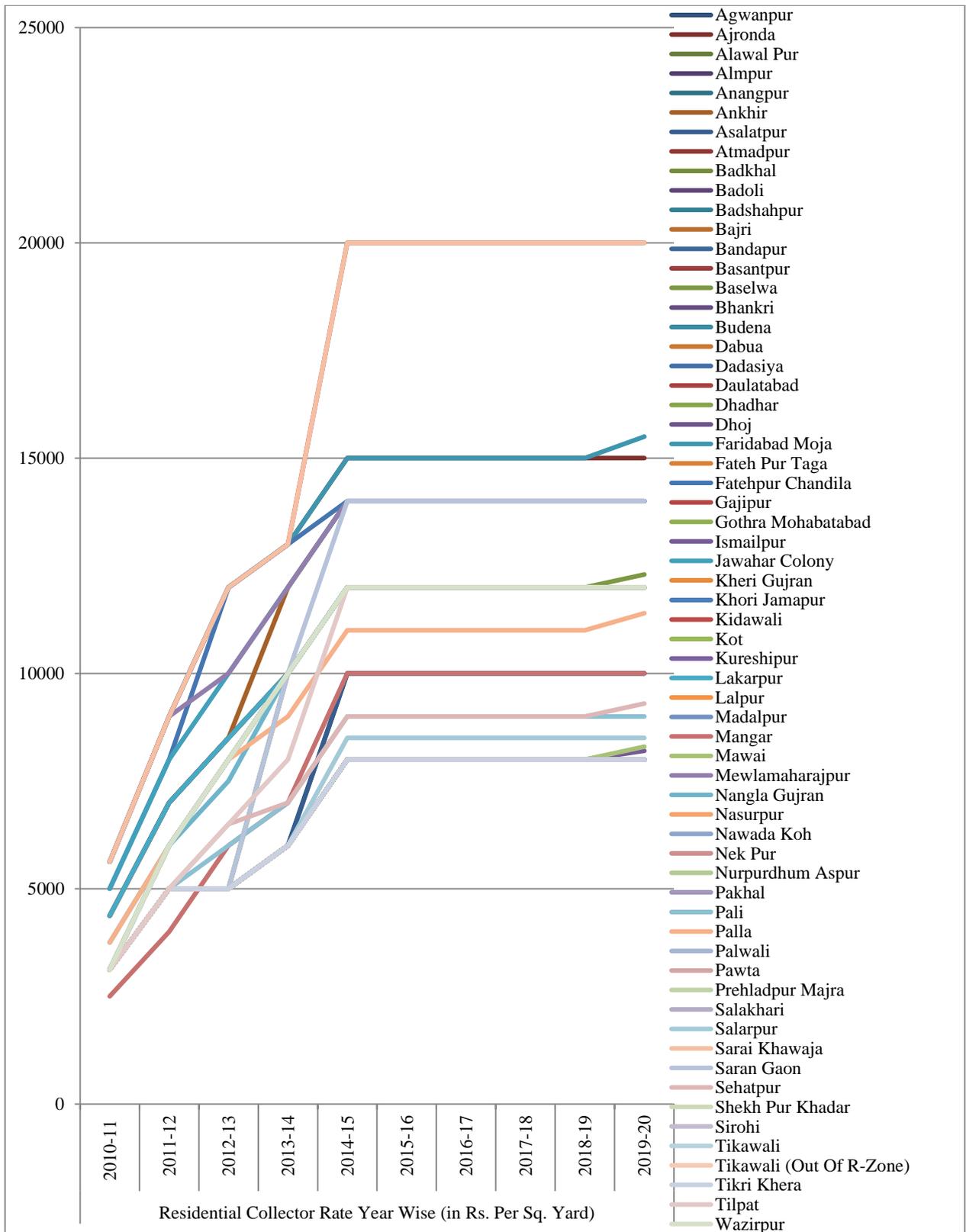


Figure 7: Residential Property (Urban Village) Collector Rate

## V. CONCLUSION

This study explored the impact of Faridabad Metro on real estate prices of the city. It is expected that the development of MRTS in Faridabad will create a positive impact on the overall real estate market scenario. A constant rise in the collector rate of residential and commercial property is being observed from the year metro line is announced to the operational of metro line. The collector rates of residential and commercial property were increasing at a fast pace from 2010 to 2014 but remained steady after that. The collector rates indicate that the metro transit system has substantial impact on residential property rate depending upon the location and the micro-market's overall potential.

MRTS brings a positive change to the area which affects land values. This is because these areas become instantly accessible & connected to the rest of the areas along the metro line. Over a long period of time MRTS will have an overall positive and visible impact in property values in Faridabad that are close to station nodes and situated on transport corridors. The land parcels which are within the walking distance from the Metro station have higher land value and this impact is higher in case of commercial property than residential. It must be considered whether the increase in the value of a property is due its close proximity to MRTS or other neighbourhood characteristic. The result of this study can provide suggestion and might be useful for real estate market and consumers who wish to invest in the city. The price rise effect of metro rail on real estate is not quick, it takes time. The impact of metro rail is generally high in earlier planning and construction phase and constant in running of the transit line.

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