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Real Estate Futures and Derivative Markets in India: Scope and Challenges

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In this paper, we try to explain how Real Estate Futures and the Derivatives market would be important for our Indian Economy. We aim to come up with the scope of Real Estate Futures and Derivative Markets in India and also take into consideration the challenges that this would face in the Indian Markets. To come up with these things we conducted a literature review, in which we went through Research Papers written before the commencement of this market regarding the basics of Real Estate futures and derivatives market in other countries as well as papers that were written after the market was implemented. The Real Estate Futures and Derivatives market will also provide liquidity to investors who want to diversify their portfolio and even to those who want to hedge their losses. Liquidity being an important factor in any futures and derivatives market, it is important to have investors who possess the right information and knowledge as to how the market functions. The Indian Real Estate Market was examined and the advantages of Real Estate Futures and Derivatives markets outweigh the challenges.

Keywords: Hedging, Bid-Ask Spread, Ring-Fencing, Collateral Debt Obligation (CDO's), Securitization, Residential Mortgage-backed securities (RMBS), Subprime, Spot market, Total Return Swap, Negative amortization, Interest rate risk, SVR

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Introduction

India is one of the largest and fastest-growing economies of the world with retail and institutional investors diversifying their income into diverse asset classes, the most indispensable of them being real estate, which has still not been efficiently capitalized and exploited. People typically invest in real estate over other financial securities due to its tangible nature and its inherent ability to be pragmatically utilized. According to the AIDIS report published in 2014, real estate as an asset class accounts for 72.6% and 47% of the total asset category of both rural and urban households respectively. This exhibits that an average individual is heavily invested in real estate and that real estate makes up a huge chunk of an individual's wealth. However, such gigantic exposure to real estate is not exclusive to India, developed nations like the USA, England, and Germany have huge exposure in real estate too. Investing in real estate comes with its fair share of problems which if not dealt with can lead to irreparable and irreversible financial impact.

Firstly, investing in real estate requires huge capital which an average individual simply does not afford, thereby pushing these individuals to take mortgages and exercise other credit facilities. Secondly, purchasing property, houses, barren, agricultural land requires hefty transaction costs which tend to pinch and deter investors. Thirdly, real estate is an illiquid asset making it effectively impossible for an investor to sell it off during a downturn thereby adversely affecting the individual's financial status.

According to the fundamental portfolio theory, an investor should hold diverse financial securities in his/her portfolio to minimize his/her risk. Although diversifying makes sense it is nearly impossible to achieve without encapsulating real estate in your portfolio since real estate as an asset accounts for such a substantial chunk of the total assets across the world, especially in India. Establishing and implementation of a derivative market for real estate will help in alleviating all these inherent problems and benefit both individual and retail investors respectively which in turn will make the financial markets more efficient and create benefits for society as a whole.

Through this research paper, we are trying to give the readers a glimpse into what a world with an efficient real estate derivative market may look like.

Research Objective

- Real Estate is a capital-intensive market with limited hedging capabilities. Separate markets for each of the major geographic regions and each of the major kinds of real estate, enabling hedging of risks. Real estate accounts for a majority of national wealth, yet futures and options markets are nowhere.
- Investors cannot invest in a largely diversified Real Estate portfolio without incurring enormous transaction costs. The short side should be taken by owners of region-specific Real Estate, this would help them hedge their position as real estate owners.
- Having futures and derivative markets would also reduce the transaction cost. The current Real Estate market comprises unaware investors which leads to higher bid-ask spreads.
- Holders of residential mortgages and mortgage insurers may find hedging in this market very reassuring. Till equity in a property is more than the unpaid balance of mortgage and transaction cost, insurers and holders don’t suffer losses. Increase risk when Real Estate markets decline and defaults increase. Hedging would provide insurance against these large risks.
- Different times and places of booms and busts make us realize that a single national futures contract is not feasible. Real Estate prices are less volatile, suggesting day-to-day movement would not be large. We expect to see that prices of futures and options tend to show day-to-day fluctuations based on news. It is likely that these markets would make the cash market more efficient.

Research Methodology

The main purpose of this paper is to highlight the salient features and importance of a Future and

Option (Derivative) market for the Indian Real Estate sector, with its primary object to help homeowners to hedge their risks in particular. As suggested many other researcher, the study is mainly based on secondary data sources which comprise data from websites, articles, and studies of various published papers(Albashabsheh, Alhroob, Irbihat, & Javed, 2018; Alhroob, Irbihat, Albashabsheh, & Javed, 2017; Husain & Javed, 2019a, 2019b; Javed, 2017, 2018; Javed, Aldalaien, Husain, & Khan, 2019; Javed, Atallah, Aldalaien, & Husain, 2019; Javed & Azhar, 2017; Javed, Husain, & Ali, 2020; Javed & Khan, 2017; A. A. Khan & Javed, 2017; A. Khan, Baseer, & Javed, 2017; Rutskiy et al., 2020) . Mainly the study was inspired by Robert J Shiller's published papers which helped in establishing the market in the US. A small sample survey was also conducted by personal interactions and using Facebook to help understand the awareness of hedging tools that are available to homeowners in the country.

Literature Review

Robert J Shiller, Alan N. Weiss, and Karl E. Case in December 1991 drafted one of the initial studies made on the topic of Real Estate derivatives. Their primary goal was to create an index-based futures and options market in the real estate sector.

In their paper, they have highlighted how there is a multitude of homeowners who face great risk against the properties they hold there are no means for them to hedge their risk with minimal cost involved. On the contrary individual and institutional portfolios possess little or no real estate at all hence making it very undiversified. They proposed to introduce a cash-settled futures and options market that would allow diversification and hedging. The authors researched the different types of mechanisms that existed in the economy at that time and saw that none of them were properly addressing the issues faces by the Real Estate sector which accounts for a majority of national wealth. The paper provides an in-depth analysis of the issues faced by the current market and how the implementation of real estate derivatives would help in solving them.

The paper discusses how a future and options market will bring about changes in the home Equity insurance, mortgage insurance, and default risk by providing hedging facilities. It also discusses how this market will lower down the rate of volatility in real estate prices and resolve rent-related problems. They have very well discussed the different horizons, advantages, doubts about the viability of the market, and how It will soothe down the business cycle, also discussing how it will bring about changes within the lives of current or prospective homeowners, Individual or institutional investors, renters, builders, farmers.

Robert J. Shiller (April 2008) in his paper on Derivatives markets for home prices explains the risk management tools used to home prices. He talks about how the establishment of an index-based market has led to the arousal of various inefficiencies and setbacks in the Home price index construction method and psychological barriers are explained. The post period of establishment of a Real estate derivatives market is described in this paper, it talks about the setbacks faced in the industry and Shiller also explains the reasons behind the slow growth rate in the derivative market for real estate. He discusses the regret theory and Hedging demand theory approach to find out the obstacles in hedging real estate prices. In conclusion, he also specifies the major reason for a setback in the growth is lack of liquidity In the market where there aggravates the hedging demand of people. Hence lack of proper hedging tools is required for the market to function well.

(Mandira 2017; Parth 2017; Nandini 2017) in their paper Asset Inequality in India discusses the differences acquired among various India Households. Their main aim is to find out the distinct asset distribution among different economic households and how the concentration has always been upheld at the top. The land is one of the most common assets it discusses how there are unequal holdings of these major assets among different classes of people. In this literature, we sought to find out how important is Real estate investment among individual investors. In almost every household we were able to conclude how important is owning land and real estate among people of different economic classes.

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Goswami, and Rangan Gupta (June 2012) published a paper on Metropolitan House prices in India, in which they addressed the housing prices in 15 metropolitan cities and what are their trends.

After studying the different trends and using Im, Pesaran, and Shin (2003) panel unit root to conclude that the price levels in metropolitan cities do not converge. Therefore a singular price index cannot be used for the entire country as there is a multitude of changes happening whether it be economic, political, or industrial due to rapid urbanization there is also a huge migration of population to these cities. Using theoretical and Data& Empirical Procedures they tried to conclude that if LOOP can be imposed in these cities. So due to various factors like environment, locality, connectivity, the extent of urban facilities around the house leads to divergence of prices in different geographical areas. Also, big individual investors invest huge capital in multiple real estates with a prime objective of capital appreciation and earn rental income, which reduces risk and return of the investment therefore diverging prices from another area.

While using Data on price fluctuations in different geographical regions and studying the moving price indexes gave them the same conclusion of variance in the price indexes of different zones. Hence they concluded that the housing markets in these different areas are independent of one another and the Law of one price (LOOP) cannot be imposed, so prices in one location cannot impose a competitive constraint overpricing in another location because a homeowner enjoys the freedom to set the price of his property.

Fabozzi, Shiller, and Tunaru in 2009 published a paper on Hedging Real Estate Risk. The paper starts by discussing how important liquidity is for this market or any other market as well. Induction of liquidity is hard in real estate as the returns are somewhat predictable. The look at different securities that are used in the market such as CDOs (collateral debt obligation) and RMBS (residential mortgage-backed securities) which led to securitization. They also review the risks which are involved in the RE derivatives market and the type of real estate risk they are hedging:

1) housing price risk,

2) commercial property price risk,

Or 3) mortgage loan portfolio amortizing risk about which we have discussed later in this paper.

They talk that in a real estate derivative market there are numerous tools and instruments which can be leveraged to hedge the risk of an investor or homeowner, hence in this paper they have discussed various property derivatives available in the market. They have emphasized the need for specialized interest hedging tools required for mortgage-backed securities which will tackle the problem of default risk and embedded payments. Their main emphasis was on how to value or price these property derivatives.

Frank J. Fabozzi, Robert J. Shiller, and Radu S. Tunaru in their paper,' A 30-Year Perspective on Property Derivatives: What Can Be Done to Tame Property Price Risk?' state the fundamental issues impeding the development and growth of real estate derivatives and insinuate ways to resolve these issues. Right off the bat, they explain some basic derivative and real concepts along with providing some hard facts about the indispensable nature of the real estate. They then discuss some of the unsuccessful earlier attempts to create financial derivatives based on real estate prices and their origin before going on to discuss the massive advantages of an efficient real estate derivative market.

Subsequently, they then discuss the main specific obstacles to more complete development of a property derivatives market: problems in matching a suitable property index to the property derivatives themselves, concerns about a limited number of parties in the market, problems of modeling property derivatives, and concerns about how regulations may affect the participation of large financial institutions in these markets. In the end, they mention that these derivatives require a sophisticated and intricate model, unlike any other derivative model we have seen before due to the unique nature of real estate as a commodity. After a comprehensive review of this paper, we have concluded that real estate derivatives can be extremely beneficial to many stakeholders due to their inherent risk mitigation capabilities, but as every coin has two sides, implementation of these derivatives to come with its fair share of pitfalls that need to be addressed and minimized as much as possible.

PropTech for Proactive Pricing of Houses in Classified Advertisements in the Indian Real Estate Market -Sayan Putatunda. This paper starts with the need of implementing Artificial intelligence(AI) and Machine learning(ML) in the Indian real estate markets, this thought occurred after AI and ML were adopted in the US and European real estate markets. This tells us about the requirement of proper valuation in the real estate sector and how the western markets have taken steps to reduce the bid-ask spread. The paper says that PropTech has three basic parts, 1. It can be viewed as a digital transformation of the real estate industry, 2. Brings more transparency and 3. Data analytics and ML form a part of PropTech as well.

The pivotal problem faces in this sector is that in India websites where properties are listed show a lot of discrepancy in their prices which leads to in-transparency. To evaluate proper and justified prices for RE properties the author comes up with an algorithm using ML and AI. Different algorithms are used such as Random forest, gradient boosting, and Artificial neural networks with different hyper-parameters. After taking out the mean percentage error and the median percentage error, it was concluded that the Random forest method is the best performer in terms of accuracy. Variable importance was set and prices were determined, it was further concluded that the error margins would be reduced further if larger datasets were to be used. The conclusions of this paper were beneficial to our paper as they point towards the simplification of making an index for the real estate sector. This index would be the basis of the real estate derivatives market.

(Basanta, 2018), (Neelam, 2018) and (Brajraj, 2018) in their paper Reform in the Indian Real Estate Sector, discuss the pros and cons of the newly enrolled Indian Real Estate Act 2016. This act brought upon various changes in the Demographics of the Indian real estate sector, one such effect pertaining was to increase the FDI (foreign direct investment) in the country's real estate sector.

The act also withholds responsibility to protect and give confidence to the stakeholders in the sector, therefore, increase the level of transparency with increased levels of regulation within the sector.

The act also establishes a real estate regulatory authority (RERA) that would help the buyers in the purchase of real estate without the fear of getting exploited by the developers or the middlemen. The paper also covers the impacts of the Act on the union budget which led to the rise of growth-oriented initiatives like 'Make in India', 'Swachh Bharat', 'Digital India', 'Housing for All 2022', 'Startup and stand up India', '100 Smart Cities' and 'Pradhan Mantri Awas Yojna' allocating huge funds. What we've derived from this paper is how the government has shown interest in the protection and growth of the real estate sector. India demonstrating a multiplier effect on the economy has shown increased rates of foreign investment, therefore, demonstrating a catastrophic change hence increasing the importance of a derivative market to help hedge the risks of the investors in the sector.

Real Estate Investment Trusts (REITs) for Faster Housing Development in India: An Analysis in the Context of the New Regulatory Policies of SEBI, 2016. This paper mainly talks in the context of REIT's, it says that there are a lot of limitations for housing and RE sector in India. Limitations are low level of penetration of the market, significantly low investments by public and private sectors, poor liquidity and resources of the players in the market, and inadequate regulatory and legal system in the country. This makes us take a look at bringing liquidity and dynamism in this sector through schemes like REITs. Other schemes like RMBS, RML, HMF, FDI in RE, SRZs, etc. also need to be promoted by the government to see development in this sector. Rising RE prices in India in the past few years have made an investment in this sector very expensive for smaller investors, REITs help solve this issue. REITs also provide an exit option to real estate developers.

The issues we need to focus on are the tax and foreign investment related ones. Issues like dual taxation under the stamp duties and capital gains tax may come in the way of successful operation of REITs in India. Changes are required in FEMA, SCRA and more similar enactments. The Government is currently going in the right direction as it introduced the Real Estate Regulation Bill, which more transparency into the sector. RBI, 2014 [21] (b) in its policy report has observed as follows:

"Development of housing and mortgage markets has an important role in growth and employment. As the government is committed to a policy of 'Housing for All by 2022', the housing sector has immense potential to grow; So do the mortgage markets". A booming REITs market would enable faster growth of the housing and real estate sector and hence the economy as a whole.

Research Analysis

How Does the market work:

Derivatives are contracts that derive their value from underlying assets. The price of a Real Estate derivative would depend on the underlying RE property it represents. In the case of a common commodity derivative market, the process to create and maintain a market is pretty simple as the underlying commodity is a good that would be valued equally across different areas. In the case of the Real Estate derivatives market, the underlying asset would have huge differences in prices across the country. An Index is made in this case. An index represents the value of RE in different areas so it becomes easier to hedge losses at the concerned area rather than a whole countrywide hedge.

Creating an index is a tedious task and there are several ways to do this, choosing the way which would be most accurate and easy to implement is the key to success in this area. Here are some ways to create an index:

1) Hedonic Price Approach: This method aims to look at both internal and external factors affecting the property. In this method, the price of a building/property is defined by its features, internal factors such as appearance, size, facilities, etc and external factors such as locality, crime rate, etc both factors are contemplated on and based on the level of effect the factor has on the property a price is created. It is both time-consuming and costly.

2) Repeat sales approach: This method focuses on the different sale prices of the same piece of real estate over a specified time. This is a relatively simple approach, but it has its flaws as well like it restricts its data to properties being sold more than twice in the given time frame.

3) Appraisal-based approach: This method focuses on the latest valuation of the property.

Once an index is created the investors would have clear prices of different areas which would reduce the bid-ask spread drastically, help investors hedge their losses, and help investors diversify their portfolios. After the index is in place the RE derivative market would work like any other derivative market in terms of its functions.

Hedging: Hedging refers to buying an investment designed to reduce the risk of losses from another investment. Hedging is similar to buying an insurance policy. For example, if you buy a house in an earthquake-prone area, you would want to protect your asset against the losses caused by an earthquake. Hence, the insurance purchase. In this example, you cannot stop the earthquake, but you can be proactive and take steps to mitigate risks in case an earthquake occurs. Separate markets for each of the different geographical regions and major kinds of real estate would complement hedging. A long position can be taken in the futures & options market by investors who want to diversify their portfolio and a short position can be taken by owners of region-specific real estate. This will also help in establishing liquidity in the market since there are buyers and sellers for both sides of the transaction.

RE derivatives give investors access to an important class that would be hard to access otherwise considering the heavy investment and huge risk involved. The primary factor in deciding which derivative contract will provide the best hedge is the degree of correlation between the factors deriving the price of the derivative instrument. A basic problem faced by the market would be liquidity, introduction of liquidity in the RE market would not be an easy task as the returns are somewhat predictable. Many types of trades can be executed in this market (short futures with a long maturity, long futures with short maturity), with futures and options on futures lots of different possibilities come into the picture. High involvement of hedge funds, investment houses, private equity funds, etc can be made possible, it would help out solving the liquidity problem.

Investors look to hedge three main types of RE risks: 1. Housing price risk

2. Commercial property risk 3. Mortgage loan portfolio amortizing risk

1)Housing price risk: This risk is mainly associated with sharp downturns or fall in house prices. This risk is a major concern not only to the owner of the property but also to banks, other lending institutions, and investors in structured products that are backed by residential mortgage loans.

2)Commercial property price risk: This risk is similar to housing price risk but it is generally not influenced by the behavior of residential housing market participants, rather commercial property prices are determined by supply & demand and specialized market participants.

3)Mortgage loan portfolio amortizing risk: this has two main risks:

- Default risk: The risk of loss of the principal amount of interest due. Hight for RMBS1 containing subprime2 mortgages.
- Prepayment risk: The risk that borrowers will prepay their loans, fully or partially, when interest rates are low. This action forces investors to reinvest at lower rates (this would be good when interest rates are high). More common in RMBS than CMBS as commercial loans have provisions to mitigate prepayment risk.

An amortization schedule is prepared at the beginning which is based on the projected prepayment rate. This schedule helps to be prepared for risks related to prepayment. Actual prepayment may differ from the amortization schedule, this would cause a deviation between the projected value and the actual value. This is known as amortization risk.

Price Inconsistencies across different zones: Usually, in the case of commodities, the law of one price applies, but real estate being unique due to the presence of numerous variables affecting its price is an outlier. Factors affecting real estate prices can be split into the environment, locality, connectivity, extent of urban facilities available in the house's vicinity, and socio-cultural factors.

There is significant price deviation over the years in real estate in addition to the price variability across different regions which showcases a need for different independent region options and futures contracts. This will allow investors and hedgers to minimize their real estate risk by focusing on their region of interest rather than The broader market as a whole.

Impact of real estate derivatives on housing rents: The absence of hedging instruments in the real estate sector adversely affects the demand for real estate. Hence, the introduction of real estate derivative markets should boost the composite housing prices to begin with, provided all other factors remain the same which in turn would provide substantial gains to existing property owners. An increase in demand for real estate will lead to an increased supply of real estate in the long run provided the cost of construction remains the same. An increased supply will lead to intense competition among the renters leading to a reduction in the rents of houses which in turn will be beneficial for the future tenants.

Lower Transaction Cost: Such a derivatives market will also help in substantially reducing the transaction costs by reducing the bid-ask spread of real estate transactions. Bid-ask spread is the difference between the asking price and bid price of a transaction which fluctuates according to the number of informed buyers and sellers in the market. Bid-ask spread is inversely related to the number of informed trade parties in the market, therefore an index-based real estate derivative market will lead to more informed traders and investors which in turn will lead to a lower bid-ask spread.

Effective Portfolio Diversification

Diversification is a technique of allocating portfolio resources or capital to a mix of different investments. The ultimate goal of diversification is to reduce the volatility i.e. risk of the portfolio by offsetting losses in one asset class with gains in another asset class. A phrase commonly associated with diversification: "*Do not put all your eggs in one basket.*" Unarguably, Real estate is the most invested-in asset class in the world which makes the presence of certain real estate related financial securities in financial markets even more critical for complete and absolute portfolio diversification. A portfolio, devoid of exposure in real estate cannot be an effectively diversified portfolio. Hence, it is incapable of completely eliminating unsystematic risk.

Prevention Of Market Bubbles:

For decades, Real estate markets have been impeded by an insufficiency of counterparties in a potential transaction due to a lack of related derivatives. Inability to take a short position on real estate when prices are inflated compared to fundamentals leads to creation of a hysteria in turn leading to a positive market sentiment driven bubble, which in itself spells doom.

Challenges:

The real estate derivative market or RED has its own set of benefits but at the same time, they have certain challenges that are faced in the sector. Looking over the market established in countries like the UK and US where these markets have flourished and shown great results. There have been various challenges faced along the way too.

One of the initial problems faced is with pricing and setting up indexes on which these derivatives will be traded. Prices of property vary from place to place. There are vast changes in the prices of the properties if we move from one geographical zone to another. Pricing in itself is a very crucial and complex topic and finding the right method to keep these indexes maintained and up to date is a very taxing job.

Investors also show reluctance before indulging themselves in property derivatives. This will greatly affect the liquidity rate in the market, for the market to run smoothly there should be an equal involvement of both investors and the homeowners. Indian investors tend to have lower sentiment towards market irregularities, investors tend to play safe than playing it risky. This problem of liquidity was a major challenge faced by the market in both US and UK. Financial illiteracy also tends to draw people back, India backed the 23rd position with only 35% of its population financially literate. Looking at the current scenario the number hasn't risen much, people are still very conservative when it comes to investing, lack of knowledge and awareness makes it very hard to attract people towards the market, fewer people buying and selling securities at the induction phase makes it less liquid.

In the UK there were certain challenges and restrictions faced in the regulatory sector, investments that were made through derivatives were seen as inadmissible for insurance companies as they didn't qualify as assets for solvency ratios.

This there on posed a big barrier as derivatives were made legal but were not seen as an ideal investment. In the US too there were challenges faced regarding Over counter derivatives, which involved the use of CDS (credit default swaps) thereon digging its way to a financial crisis.

Some of the recent investor activities may even contradict some challenges faced by this market. On August 7th,2020 Mindspace REIT, the second REIT in India, was oversubscribed 12.96 times, showing that investors are confident about REITs doing well. If more people become aware of the advantages of RE derivative and futures markets and are confident about its success then India could avoid some of the challenges faces by other nations.

REITs:

Real estate investment trusts (REITs) were created in 1960. REITs allowed investors to invest in broader portfolios than they couldn't if they invested directly in real estate. REITs were able to pass through corporate profit tax and their shares were traded on the stock market making it relatively liquid, these factors really drove people towards purchasing REITs shares.Although REITs are popular because of these advantages, there are some disadvantages as well. REITs cannot invest in residentially occupied real estate properties. REITs shares are listed on the stock exchange which makes the share prices substantially correlated with the prices of shares in the stock market. If you notice the price changes of REITs shares you can see that the share prices go down when the market is down, even when there is no price fall in the real estate sector.

Now talking about the hedging capabilities of REITs, an investor can hedge his losses by shorting the REITs stock which is concentrated in his geographical area. This while easy to say on paper is really hard to do in practice as REITs rarely hold properties in a single geographical area or city.

REITs are not geographically concentrated because the creators of REITs do not have any specific incentive to become a hedging mechanism. Creators of hedging media benefit from the transaction costs and in this case, the creators are not the recipients of transaction costs, so they focus on promoting investment media. When you talk about the majority of homeowners, shorting REITs stocks is not an option to hedge. There are just not enough shares to short so that a person could successfully hedge one’s losses. Now if you look at the current Indian market then there are only 2 REITs currently present and the value of REITs shares outstanding is limited to the value of real estate owned by the REITs. So even if the number of REITs were to increase in the coming future it would not be a good way to hedge. So a market is needed between individual property owners and investors, which provides futures and options market, is cash-settled, and is based on indexes of Real Estate prices. In India first REIT, which raised Rs 4,750 crore (US$ 679.64 million), was launched in early 2019 by global investment firm Blackstone and realty firm Embassy group.

Conclusion

The benefits of the establishment of a real estate derivative market in India will be of much greater significance than the hurdles or the limitations of such markets in the long run. This is an idea, which if implemented correctly can play substantially boost the Indian Financial sector''s growth. Having a Derivative market for real-estate has proven to not only help Home owners to hedge their risks but also boost composite housing prices hence helping them make capital gains out of their investments. Using this derivative, price indexes for different geographical regions can help alter Investors and hedgers to their specific area. The influx in demand for real estate will there on increase the supply in the long run which will thereon increase the renters in the market hence pluming the rent price down for tenants. Having a indexed based derivative market will help increase the number of informed traders and investors which will there on lower the bid- ask spread, investors can diversify their portfolios by investing in real estate and therefore venture out in new markets hence avoiding enormous investment costs. For hundreds of years, India''s financial sector has been lagging behind its western counterparts in Terms of creativity and innovation. The Indian financial institutions take around 30-40 years on average to embrace western advancements and make them a part of its repertoire. With the introduction of real estate options and futures, India would not only significantly cut this time gap but also become an industry leader in this segment. A successful establishment of the real estate derivatives market, besides its inherent advantages, would also illustrate to the world India''s willingness and ability to innovate and take risks.

Scope for further research

Indian Real Estate Industry:(Source: Indian Real Estate Industry Report 21st October 2020) Indian real estate sector has one of the biggest growth potentials and contributes a great deal to the GDP of the country. The country’s real estate sector which was value at 120 billion USD in 2017 is expected to reach a height of 1 trillion USD by 2035 while contributing 13% to the GDP by 2025. Due to the swift rise in the need for infrastructure, there has been a great spike in the need for real estate throughout the country. There have been surges in demand for both housing and commercial properties, with housing sales touching 2.61 lakh units by 2019 in metropolitan cities.

Indian real estate sector has humongous growth potential, with a rise in demand the sector has garnered a 6.26 billion dollar investment in 2019 itself, out of which private equity investment contributed $1 billion. This shows the size of the market and gives us a gist of the growth potential of the sector. Investments and liquidity are what help a market run efficiently, without any liquidity flowing there is very little scope for a derivatives market to succeed. We have also witnessed a huge influx of investments in the Indian real estate sector, these investments are not only coming in from within the country but also from outside as well. There are new residential and commercial projects in the country therefore generating millions of dollars of funds for these projects. Government initiative to improve the real estate sector has also proven to be of great help, for example under the PMAY (Pradhan Mantri Awas Yojana) about 1.12 crore houses have been sanctioned in various urban areas, which has also generated huge employment opportunities.

The introduction of REITs (Real estate Investment trust) which was given approval by SEBI (Securities Exchange Board of India) which allows investors to now invest in the Real estate market has given rise to a well-informed investor and therefore making the market more accepting to new changes and challenges. Investors' response to REITs was remarkable showing such high numbers we can very well say that we see a strong prospect for a derivatives market for Real estate. What we can see is that there is a huge opportunity for the real estate sector to seize and with the help of a derivative market we can see a huge growth of the sector and upscale economic growth.

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