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Research Article

The Study of Relationship Between FDI and Stock Market and The Real Estate Sector

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Abstract: The diversity and complexity of Property Market, its linkages with economy and investment sphere has necessitated a closer study on its dynamics and movement. This paper seeks to identify the position and the need for securitization of real estate in a multi-asset portfolio in order to be invested in Indian circumstances. The Johansen cointegration test for HPI (Real Estate Index) and NSE 50 (Stock market index) shows that there is no longer, nor is there any short-term, connection between those market types in the VAR exogenity component on quarterly data (Q 2009-10 to Q3 2016-2017). The division between the equity market and the immobilised market should then be kept within a fund for purposes of diversification. The desired class of assets for investment is shown by descriptive statistics. It also shows that direct investment in real estate is necessary to be classified as an asset class and that securitisation cannot be used to standardise the assets classes. Findings are relevant both for regulators and market traders. This research helps the alternate literature on investing in emerging markets..

Keywords: Direct Real Estate Investment, Cointegration, Granger causality, Securitization

1. Introduction

Foreign Direct Investment (FDI), apart from being a significant engine of global growth, has become a major non-debt financial resource for India's economic progress. Global businesses invest in India to benefit from lower salaries, exclusive investment benefits such as tax waivers and so on. For a nation where foreign investment is made, it often means technological know-how and work creation.

The favorable policies and the robust business climate of the Indian Government have ensured that foreign capital continues to flow into the region. Over recent years the Government has taken many steps such as relaxation of FDI standards through fields such as security, refineries, telecoms, energy exchanges and stock exchanges among others. The variety and sophistication of the property market and its ties with economy and investment also demanded a closer analysis of its dynamics and movement (RBI, 2008, 2010). Posts have become explosive about the complexities with respect to the United States and the United Kingdom (McDonald, 2002; Barras, 2009; Brooks & Tsolacos, 2010). In the developing markets the character of the property sector has not been extensively studied (Ciarlone, 2015). Very few studies are conducted in Indian sense, e.g. Halbert and Rouanet (2014) and Newell and Kamineni (2007). Since the advantages of including real estate in a portfolio differ across countries (Hoesli, Lekander, and Witkiewicz, 2004), the position of the property in the Indian sense must be understood.

The purpose of the present analysis is to examine the long-term and short-term relationship between the real estate and the stock market. The presence and segmentation of an association between the financial market and the real estate market. This thesis explores the interaction of the equity market with the real estate market using the co-integration examination suggested by Johansen (1988) and Johansen and Juselius (1990). In dismissing the null hypothesis that no co-integration takes place, it assumes that these two economies will maintain a long-term equilibrium and suggests that the financial market is merged into the real estate market. It may also be inferred that the fund portfolio replaces these two investments well. Conversely, if the null hypothesis of no cointegration is acknowledged, there is a dividing line between the investment market and the real property market, which may be kept in a fund for diversification. Toda and Yamamoto (1995) Granger causality in the erogeneity of the VAR block is used to diagnosis long-term equilibrium.

We are looking at a massive amount of US$ 90 billion. This is what Merrill Lynch anticipates the growth of the Indian real estate market by 2015. Because industry is excited about this number, RBI has expressed its concern. It is justified that the portfolio inflows could affirm the FDI standards in the market. In analysts' opinion, rather than curbing portfolio inflows, the central bank should examine FDI criteria. Most research on the relationship between FDI and financial market stability concentrate on the development of the financial market as the connection between FDI and economic growth. Our disciple does not yet have a thorough understanding of dire causality between FDI and growth of the financial market, particularly in emerging markets where financial markets are developing.

We record a two-way case between FDI and stock market growth indices in selected developing countries in an upcoming paper from the World Bank Economic Review (WBER). If the relationship between financial market growth and FDI is analysed, the outcomes are determined by either the stock market factors or the development

indices of the bank sector. The partnership is unclear and inconclusive for banking sector growth indices. Therefore, consideration is required when evaluating the relationship between financial market growth and FDI, since the findings which depend on what variables of financial market development have used stock market development measurements or banking sector progress.

Generally speaking, there are 2 categories in the literature on the partnership between FDI, financial sector creation and economic growth. First, FDI is effective in stimulating development only if such requirements are fulfilled, like a well-established financial market (e.g. Alfaro et al (2004, 2010), Hermes and Lensink (2003)). The second group shows that the well-functioning financial sector or market liberalisation — that is, expansion of the financial market — will help boost growth (Bekaert et al (2005), Levine et al (2000), Levine and Zervos (1998).

In our research, the FDI and financial market growth have been assessed using panel data from emerging market sources.

At least four benefits lie in our reliance on emerging markets:

Data are available in virtually all of the country in our sample; institutional quality in those countries is less diverse than in a sample that includes the markets in development, so there would be a common explanatory variable that will have less impact on the results than it will be in a sample that may link economic development and other economic variable (such as GDP);

We log the beneficial effects of both FDI and stock market growth indices. Studies concerning FDI and creation of the capital system, in particular stock market growth, could also address possible endogenous issues. Therefore, we use a scheme of concurrent equations to further explore the consequences for the two-way connection between FDI and the growth of financial markets and monitor other factors that drive FDI inflows and financial market development.

In these emerging economies, there are several ways of explaining the two way connection between FDI and bursary development. Firstly, international investment contributes through its spillover results to the development of local equity markets. This is due to the rise in international investment, because multinationals tending to be from developed nations where bond finance is a tradition, the affiliates of multinationals participating in FDI operations are classified on local stock exchanges. In addition, according to the statement of the political economy, it can be expected that FDI inflows enable the political elite of that country to implement business-friendly regulations — in particular, investor security and better governance: this facilitates stock market growth. On a comparatively advanced capital exchange, on the other side, helps attracting international buyers, since a market is seen as a symbol of vitality, open-mindedness by national authorities and an economy that is favourable to the market. In the emerging countries that have more mature capital markets than those of other developing countries, this is particularly valid.

These findings indicate a key policy recommendation: Business-friendly regulations should be supplemented by policies to encourage more FDI, particularly stock market regulations, such as frameworks for better governance and protection of investors. Thus the value of the FDI spillowing effects may be maximised by countries.

Like they say, you will have two ends, no matter how small you slice. An increasing market has its own responsibility generating infrastructure and real estate demands. When we glance at the following figures, the relevance of real estate also increases:

1) It is India's second largest employer (including construction and facilities management)

2) It is related to about 250 auxiliary industries such as cement, brick and steel through reverse and forward linkages.

3) The multiplier benefit of a unit rise in spending in this field and the potential to produce revenue up to five times.

Therefore, numerous concessions and incentives have been provided to the sector to promote expansion. This will lead to changing the present allocation of housing and immovables to India's GDP at 1% against 3-6% for developed countries.

Money can be obtained by interest, equity or a combination of the two. Debt finance may be collected from outlets like banks, NBFC or foreign commercial borrowing (ECB). Participation of equity would require participation at the level of the business or at the project level. FDI is one way to fund the ventures of a business. Immobiliary FDI is allowed under some project requirements in building and project creation pertaining to both

residential and industrial development in housing cities and commercial offices. Investing in India definitely is a strong choice, with rates of about 11.0% for offices that hit 20-25% in greenfield ventures. A research by ASSOCHAM in November 2006 reports that the share of property in FDI is rising to 26% by the end of 2007 from some 16% last year. Table 1 displays the spending rate in the first quarter of 2007.

Many investors are seeking to look west since listing on local markets (BSE/NSE) is challenging. The Goal with its simplified criteria was one of the easiest international shores where different players raised cash (Table 2). These funds are used in FDI (Foreign Direct Investment) compliant mega-projects spanning from suburban townships across the world.

There have recently been several flags and issues posed in this sense. As assets have soared, values and the strong concern of a real estate bubble. No clear methodology or guidelines on valuations have been developed, but the imperative fear of bulls hunting bears and shattering many dreams has been generated.

Some of the questions posed or fixed are –

1) In terms of pre-IPO placements, the Ministry of Finance noticed that the transaction can be listed as a foreign direct investment or FDI subject to a protracted duration of lockout, so that the uncertainty on these assets would be avoided if FIIs desired to invest in pre-IPO placement of real property firms.

2) SEBI issued guidelines on valuations which suggest that real estate valuations should be focused on their development plans, not on their land banks. There is also a plan for the registry of valuers with the SEBI.

This industry offers its participants great opportunities – be it developers, companies, FII's or institutional investors – with the introduction of Real Estate Mutual Funds (REMFs), corporate governance problems, tighter enforcement by players, sophisticated transactions and improved accountability. The Tier III towns, with less access obstacles in the form of affordable land rates and the availability of land banks, will also be a new place for the developers.

The launch of Commercial Real Estate Assets under the type of REIT in India is a significant move towards securitizing the Indian immobiliary industry. It is therefore necessary to decide if direct real estate investment is adequate to be identified as an asset class, and does not involve standardization by means of securities to be invested. The statistical properties in the sample log return sequence (Brooks & Tsolacos, 2010) are used to assess if direct immovable property counts as an alternate asset class with respect to its risk-return characteristics.

It is essential to recognize such relationships for both investors and policymakers. It indicates future benefits of long-term diversification as buyers own direct real estate and stocks concurrently. Their total income, usage, aggregate demand and jobs could all be impacted. Local municipalities are seeking to deliver effective tax and development policies in response to this possible chain reaction (Lin & Fuerst, 2014; Kiohos, Babalos, & Koulakiotis, 2017).

2. Literature Review

Many researches have analyzed the connection between stock and the real estate industry, but the findings which vary because of variations in sampling, data quality or economic conditions (Ambrose, Ancel, & Griffiths, 1992; Chaudhry, Myer, & Webb, 1999; Liow & Yang, 2005 and Lin & Fuerst, 2014).

The presence and segmentation of an association between the financial market and the real estate market. Geltner studies (1990); Wilson and Okunev (1996), Ling and Naranjo (1999), Quan and Titman (1999), and Lu, Chang and Wei (2007) demonstrate proof in support of two consumer segmentation. Knight, Lizieri, and Satchell (2005), Hoesli and Lizieri (2007) and Adcock, Hua and Huang (2016), on the other side show that there is a relationship of convergence within the two asset markets under investigation.

Baum (2009, p. 5) notes that The direct implication of property being different is its diversification potential, and hence the justification for holding it within a multi-asset portfolio." Direct property assets have proven to provide valuable advantages in terms of diversification of a portfolio comprising stocks (Hoesli et al., 2004 and MacKinnon & Al Zaman, 2009). However, relatively few research have explored the impact of direct real estate markets on alternate conventional capital markets.

International diversification has been found to be much more effective in the Asian real estate industry than in the European real estate sector (Bond, Karolyi & Sanders, 2003) and there are long-term prospects for diversification through investing in property in many Asian countries (Garvey, Santry & Stevenson, 2001) (2007).

The launch in India of Commercial Real Estate Properties in the form of REIT is a significant move towards securitising the Indian Immobilien Sector (Das & Thomas Jr, 2016). Pai and Geltner (2007) have demonstrated

that less systematic risk indirect real estate continues to give better returns. The Swenson Model defines immaturity and non-transparency as he desirable aspects of an asset class. According to Hoesli and Oikarinen (2012), Indirect Immobilien provides liquidity and clarity of knowledge, yet is strongly interrelated with a broader stock sector. In this scenario, it cannot function as a fund mix diversifier. It is therefore necessary to decide if direct immovable investment is appropriate to be described as an asset class and does not need standardization through securitization to be investible.

3. Data And Methodology

3.1. Research Objectives

I.To find out whether direct real estate investment in terms of their risk-return characteristics qualify as an alternative asset class.

II. To examine the relationship (long run as well as short run) between equities and real estate in India.

a) To test whether there is cointegration relationship between stock and real estate markets.

b) To examine whether a causality relationship exists between the stock and real estate markets.

c) To find the impact of FDI in real estate on employment, income inflation and interest rate and thus affordability of real estate (SEM)

3.2. Research Approach

The effects of an asset, which an individual would like to hear about before contemplating investment in securities, are stated in four stylised facts, i.e., return (average specimen), uncertainties (standard deviation), whether or not severe returns are over predicted value (positive skewness) and the relative likelihood of extreme returns (kurtosis). These statistical predictive properties of the survey log returns sequence are used to evaluate if direct real estate counts as an alternate asset class in terms of its risk-return characteristics.

ADF (Increased Dickey Fuller) test controls the stationarity of results. The methods used to analyze a long-term association between capital markets and immobilization markets is Johansen Cointegration. Although Granger causality was used for VAR block erogeneity for short-haul diagnosis for long-haul equilibrium relationships by Toda and Yamamoto (1995).

3.3. Sources of information:

In India, the CPI(UNME) and CPI(IW) rental data were historically only the source of data on housing prices1. There are currently three separate methods for monitoring house prices, i.e. NHB's RESIDEX, Indian Reserve Bank Housing Price Index (HPI), and residential property prices index (RPPI). This analysis uses HPI details, as the coverage of registry data is more comprehensive than that obtained from the banks/HFCs (for RESIDEX and RPPI) since all domestic transactions are not supported by banks/HFCs.

The secondary details was obtained from inventory and real estate indexes (NSE 50 Index) (HPI). Quarterly statistics was obtained for both Q 1 2009-10 and Q3 2016-2017 indexes, and 31 data points are thus available. But from Q 9 2008-09 to Q 3, the HPI series is usable. 2016 – 17, although two base years results, viz. 2008-09 and 2010-11, are available. The time series developed with the Laspeyres formula as the base year for 2008-2009 would not agree with the time series built with the base year for 2010-2011. The current research then uses Splicing (Hill & Fox, 1997) to merge these two time sequences. Eviews are used for methodological purposes.

4. Results And Discussion

Continuously compounded returns (log returns) are used for study. Log returns of the NSE and HPI series are denoted respectively by LNRNSE/lnrnse and LNRHPI/lnrhpi. Initial delay four was used for model formulation as a quarterly data and data frequency may be used according to Brooks and Tsolacos (2010, p. 380) to assess delay.

Table 1 reveals that the mean the predicted return is higher for immovable return, the normal risk variance for real estate return is smaller, Kurtosis (relative likelihood).

Table 1: Descriptive statistics of log return series of real estate market and stock market

	LNRHPI	LNRNSE
Mean	0.037280	0.017662

Median	0.040711	0.022772
Maximum	0.077338	0.350972
Minimum	-0.011797	-0.281496
Std. Dev.	0.021689	0.116715
Skewness	-0.224946	-0.220334
Kurtosis	2.489109	5.358695

Extreme returns occur) are poor for a desirable return on immovable assets, as investors favor returns similar to projected returns. For all asset groups, skewness is detrimental, which is unwanted. Beside skewing, other metrics are beneficial for immovables, which show that they are a suitable investment asset type. It demonstrates further that direct real estate investment is necessary to be described as an asset class, and that securitisation does not need standardization to be investmentable. This is compatible with the Swenson Paradigm, which defines immaturity and openness as the desirable characteristics of an asset class. Here the illiquidity premium and underlying inefficiency result in the desirability of direct real estate investment. The premium liquidity and the actual portion of immovables are adding to portfolio performance (Ang, Nabar, & Wald, 2013). Direct real estate investing provides liquidity and clarity of knowledge but is still closely connected to a larger financial markets (Hoesli & Oikarinen, 2012).

The ADF (Augmented Dickey Fuller) test mentioned in table 2 shall be used to study the root of variables before performing statistical studies. The findings reveal that the two variables are non-static at their respective stage and stationary at their first difference..

Table 2: Augmented Dickey-Fuller test statistic

	CNX NIFTY		**RESIDEX**	
	t-Statistic	**Prob.***	**t-Statistic**	**Prob.***
Unit root estimation at level	2.70533	0.0867	1.41763	0.5581
Unit root estimation at first difference I	4.45191	0.0018	5.24906	0.0002

Table 3: Result of Johansen Cointegration Test

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**0.05 Critical Value**	**Prob.****
None	0.274799	12.07211	15.49471	0.1535
At most 1	0.133251	3.718161	3.841466	0.0538

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized	**Max-Eigen**	**0.05**

No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.274799	8.353950	14.26460	0.3439
At most 1	0.133251	3.718161	3.841466	0.0538

Again the long-term partnership was tested using Johansen Cointegration Technique. Table 3 shows the findings for the Johansen Cointegration Exam. The trace and max test is done to evaluate the maximum number of cointegrating vectors. Both the trace test likelihood value and the overall self-equivalence test are greater than the 5% statistical significance essential value, which indicates that there is no mixture of HPI and CNX NIFTY. Thus there is no long-term association between real estate and the equity market, which also confirms the diversifiers of both.

There are no long-term partnerships, so it is possible that the Toda Yamamoto Granger's Causality Test would test a short-term dynamic relationship.

Exogeneity of the VAR block. The result is reported in table 4.

Table 4: VAR Granger Causality/

Block Exogeneity Wald Tests

Dependent variable: LNRHPI			
Excluded	**Chi-sq**	**Df**	**Prob.**
LNRNSE	4.033758	4	0.4015
All	4.033758	4	0.4015
Dependent variable: LNRNSE			
Excluded	**Chi-sq**	**Df**	**Prob.**
LNRHPI	4.420597	4	0.3521
All	4.420597	4	0.3521

As the p value is more than 5%, it is concluded that there is no causal relationship between Real Estate Market and Stock Market.

4. Data Analysis Using SPSS

4.1 Introduction

The data analysis findings for the collected data from the field are presented in this portion. The research data was collected exclusively from secondary sources and analysed with the aid of the Social Sciences statistical package (SPSS). Figures, tables, means and standard deviations were used to display the results.

4.2 Review and submission of data

The data collected included the duration

Table 4.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Performance of the real estate sector	44	.00	9.40	2.5068	2.02558
FDI	44	4.46	9.60	6.5412	1.09947
Inflation rates	44	3.33	29.13	10.5495	6.79438
Interest Rates	44	12.22	20.21	15.2643	2.08404

In Table 4.1, the highest output value of the real estate industry in India was 9.40% while the value minimum was 0.00% with 2.5068% mean and 2.02558% standard deviation. The results show that the property market is still rising in India. Furthermore, foreign direct investment had a minimum value of 4.46%, although the median value was 9.6% on average of 6.5412% and the standard deviation was 1.09947%. The inflation rate was 3.33 per cent minimum, 29.13 per cent high, 10.5495 per cent mean, and 6.7943 per cent standard deviation. The interest rate, on the other side, had an average of 12.22%, the highest value was 20.21%, while the average was 15.2643% and the standard deviation was 2.084%.

4.4 Analysis of trends

In the report, pattern research was conducted in order to examine the trends in immobilisation, external investments, inflation and interest rates between 2005 and 2015. The results are presented in the following paragraphs.

4.4.1 FDI Direct Foreign Investment

The research aimed at determining the pattern in the study timeframe of foreign direct investment, as a percentage of GDP in India. The results are summed up

Figure 4.1: Foreign Direct Investment FDI

The figure 4.1 results show the pattern in foreign direct investment development. The results show that the development of FDI over the time under review has typically fluctuated. Foreign Direct investment in 2006 has the least benefit, as measured by 4.995 percent of GDP. Following this, the value of foreign direct investment was sharply increased to its highest in 2007. The FDI stock recorded the highest valuation in 2015 with steady growth between 2010 and 2012 and 2013 to 2015.

4.4.2 Tariff of interest

The research was also aimed at determining the interest rate activity during the study era. Figure 4.2 shows the results.

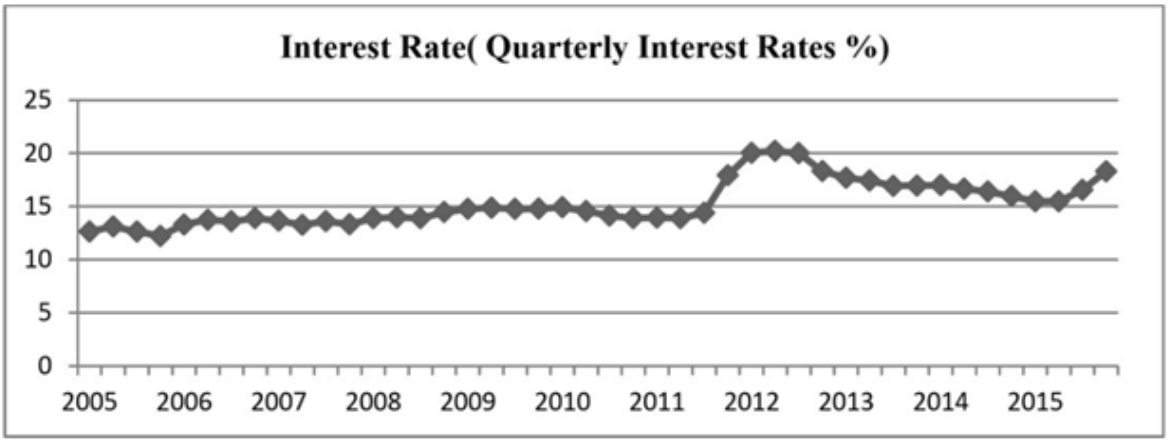

Figure 4.2: Interest Rate

Figure 4.2 shows an increase in the interest rate in the last quarters of 2005 and 2007 from 2005, with a small decrease. There was a marked reduction in the interest rate between 2010 and 2012 and between 2013 and 2015 and a suitable borrowing climate. The decline can be explained in part by the 2010 establishment of the Credit Comparison Office that improved credit sharing processes and reduced credit costs by interest rates. Around 2011 and 2012 there was the greatest rise in concern.

4.4.3 The rate of inflation

The research attempted to explore the inflation rate shift during the study time in India. Figure 4.3 shows the results of the pattern study.

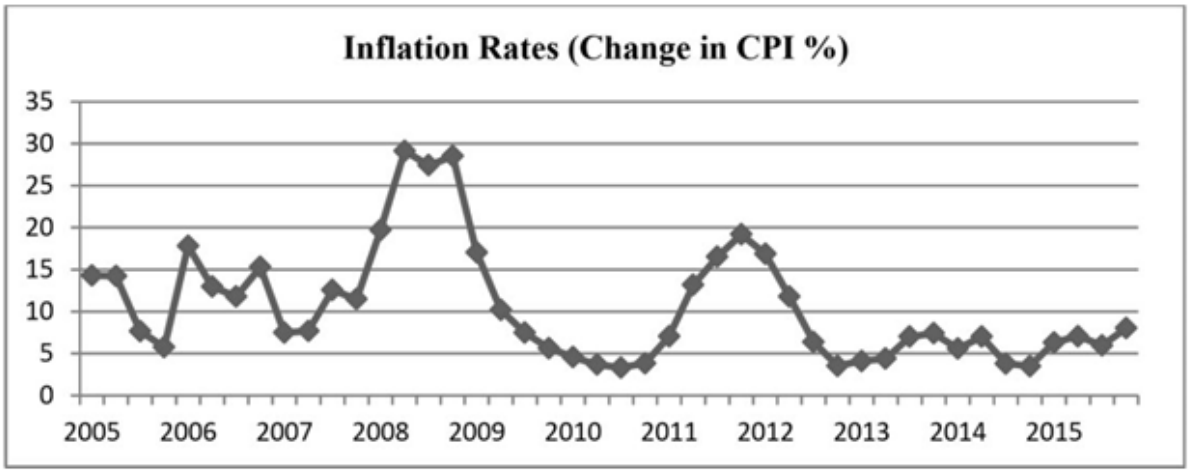

Figure 4.3: Inflation Rate

Footnote 4.3 Over the time under study, inflation rates fluctuated. There was, however, a significant drop in inflation rates between 2009 and 2011 and between 2012 and 2013. This was a favourable economic climate. In 2008 and 2011, the maximum inflation rates increased, with a rise from 19.70% in the first quarter to 28.50% in the first quarter and a rise in the fourth quarter of 2011, from 7.05% in the first quarter to 19.19% in the fourth quarter. The impact of post-election violence in India after the 2007 contested elections and uncertainties about the 2012 elections could be explained in part. this could be explained.

4.4.4 Real Estate Service Performance

The study finally sought to determine the pattern of immobilisation industry success in India as measured by real estate investment development. Figure 4.4 generalised the results of the pattern study.

Figure 4.4: Performance of Real Estate Sector

The productivity of the property fluctuated between 2005 and 2015 as seen in Figure 4.4. The highest rise between the 3rd quarter in 2005 and 2006, 3rd quarter in 2006 and 3rd quarter in 2007, 3rd quarter and 4th and 4th quarter in 2007, 2nd quarters in 2010, 2 and 2 quarter and 4th quarter in 2013 and 3rd quarter in 2014 and 1 and 4th quarters in 2015. The biggest decline in productivity occurred during the fourth and fourth quarter of the year and quarter of 2010 between the fourth and third quarters of the year, the first quarter of 2010 and the fourth quarter of the first quarter of the year, and the first quarter of the year. The fall in immovable sectors from 1 to 4 quarters 2008 and from 3 to 4 quarters 2012 may be attributed to the instability and volatility of the elections in 2008 in 2012. In the fourth quarter of 2014 the output of the immovable sector was highest and in the third quarter of 2013 it was lowest.

4.5 Analysis of Recovery

In the immobilised industry, three variables, Foreign Direct investment, inflation and interest rates were analysed for their contingent variable output. At 5% conviction stage, the study was performed. By contrasting the likelihood value achieved with confidence level 0.05, the importance of the three variables in the model was assessed. If the chance value was below the trust mark, the variables were deemed meaningful. In addition, the F-table significance of the regression study was contrasted with the F-value. All changes on the dependency variable if the F-table value was less than the returns analysis value is known to be strongly correlated with variables.

Description of Model 4.5.1

The coefficient of determination resulting from the regression, as described in table 4.2, was used to assess the degree of output of the property sector attributed to foreign direct investment, inflation and interest rate. The degree to which variations in the dependent version can be interpreted by changes in the separate versions studied is a coefficient of determination.

Table 4.2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.70[a]	.49	.45	0.04791

Table 4.2 shows that the magnitude of R is 0.70, R is set to 0.49 and R square is set to 0.45. The three variables have shown that the efficiency of the real estate sector in India has changed by 49 percent. The coefficient of determination (R) of 0.70 also showed a close association between the variables.

4.5.3 Test of Regression Model Significance

Analysis of variance was undertaken to test the significance of the model.**Table 4.4: ANOVA**

Model	Sum of Squares	df	Mean Square	F	Sig.

Regression	86.71	3	28.90	6.89	.004[b]
Residual	167.757	40	4.194		
Total	**176.428**	**43**			

The ANOVA results showed a likelihood of 0,004 which makes it an important model in the provision of relationships between the studied variables, because the probability level was lower than 0,05. F-test statistical meaning 6.89 was echoed, which exceeded the F-critical value (from table) 2.32. Since F was more important than F (6.89>2.32) this was a direct indicator of statistic significance of the overall multiple regression model.

5. Conclusion

The analytical results show that there is no short and long-term association between the investment market and the real estate market. There is segmentation between the equity market and the immovable market and all of these securities should be retained for diversification in a fund. The explanation for this segmentation is that the systemic danger of the immovable economy is regulated by rules that vary from equity markets. It gives a real advantage of diversification by serving as an inflation shield.

The results are relevant both for policy makers and for market traders. It is essential to recognize such relationships for both investors and policymakers. It reveals that there are future benefits from long-term diversification if buyers own direct property and inventories at the same time. Their total income, usage, aggregate demand and jobs could all be impacted. Local municipalities are trying to propose effective tax and development policies in response to such an imminent chain reaction. While investigating relationships is vital, it remains important to find the underlying forces that drive. Further study should also be carried out in this area.

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