

# RISK, RETURNS AND PORTFOLIO DECISIONS IN ALTERNATIVE INVESTMENTS

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## ABSTRACT

*This article focuses on analysis and appraisals of risk, returns and portfolio decisions of different classes of alternative investments and their impact on Indian capital market during the period of 2007-2010.*

*The number of alternative investment vehicles available to investors is really huge. It is almost impossible for any investor to allocate his funds in every type of alternative investments. The selection of the proper alternative asset should be based on different needs of the various investors.*

*Analysis is carried in collecting various types of risks and returns taken by the fund managers in performing and investing in the alternative investment. Further, analysis is also carried for preference of investors in selecting or continuing with the fund managers.*

**Keywords:** Hedge Funds, Derivatives, Private Equity and Real Estate Investment Trusts.

## INTRODUCTION

Alternative investments are those investments which are made into assets that do not fall under one of the three traditional asset types (Cash, stocks and bonds). Alternative investments usually require high minimum capital. Moreover, investments in these alternative avenues are less regulated. Alternative Investments are favoured mainly because their returns have a low correlation with those of standard asset classes. Because of this, many large institutional funds such as pensions and private endowments have begun to allocate a small portion (typically less than 10%) of their portfolios to alternative investments such as hedge funds. While small investors may be shut out of some alternative investment opportunities, real estate and commodities such as precious metals are widely available. Alternative investments grew out of the benchmark-driven, style-denominated form of investing that plagues most of the long-only industry. Most asset managers still operate in the sphere of traditional stock and bond funds. These investments are constrained to remain close to their benchmarks or peer-group style boxes. Alternative Investments were invented as a way to think outside the benchmark. They often operate with disdain to a benchmark,

frequently eschewing a peer-group style of investing. These investments, in fact, are designed as an alternative to benchmark-driven or peer-group style boxes. Most interesting part in alternative investment is investment managers do not have a mandate to follow a benchmark. To overcome this problem, investors may have to create custom-made benchmarks; the simplest method to do so is to use the Sharpe style analysis approach. The goal is to create a portfolio of readily investable assets that best replicates the return on the active manager.

### **Risk, Returns and Portfolio Decisions**

Investors invest for anticipated future returns rarely can be predicted precisely. There will almost always be risk associated with investments. Actual or realized returns will almost always deviate from the expected return anticipated at the start of the investment period. Naturally, if all else could be held equal, investors would prefer investments with the higher expected return. Therefore higher-risk assets priced to offer higher expected returns than lower-risk assets. The effect of diversification on portfolio risk, the implications for the proper measurement of risk and the risk-return relationship are important in Alternative investments.

### **STATEMENT OF PROBLEMS**

1. Indian Government is hesitant to introduce Alternative Investment Vehicles in the Indian Economy.
2. A Hedge Funds investment amounts to High Risk.
3. The Regulations are not applied for over- the- counter products to reduce the risk.
4. Fund Managers of Private Equity funds are strict to their own Due Diligence.
5. It is difficult to arrive at reasonable NAV for REITs as it is influenced by many factors like Geographical and Economic Conditions.

### **OBJECTIVE OF THE STUDY**

1. To Study the impact of Alternative Investments if they are introduced in Indian Market
2. To Study whether the Hedge Funds Yield Positive returns under (a) Bullish Market (b) Bear Market or Both
3. To study whether the financial crises arises due to under-utilization of Derivative Instruments
4. To study the different types risk profile taken by the Investors investing in private equity to meet their expected returns
5. To Analyses from the available Literature that REITs in an Alternative Investment Vehicle.

### **HYPOTHESES OF THE STUDY**

1. Alternative Investment will be the best option to Minimise the Risk for Indian Investors in future

2. Transparency in Hedge funds will yield performance and effective measures of Risk.
3. Rational Selection of Derivatives Instruments results in Hedging Risk
4. Investors' perception and expected returns in private equity investment overweighing high risk.
5. Absolute Price measurement in US-REITs can stabilize present financial crisis.

## RESEARCH METHODOLOGY

### Universe

The present study has covered all the apex companies dealing with hedge funds, derivatives and private equity.

### Selection of the Sample

To assess the quality of the study, the universe mentioned above is not possible for an individual to reach every company of Alternative Investment. The selection of the companies from Alternative Investment Industry is purposive and based on size, nature and types.

### Reference Period

The information and primary data of these companies will be collected for three consecutive years viz. 2007-2008, 2008-2009 and 2009-2010.

### Methods of Data Collection

- **Primary Data:** Following tools are used to collect the primary data
  - a. Questionnaire: For the purpose of collecting primary information a detailed and comprehensive questionnaire prepared based on the objectives, problems and hypothesis of the study.
  - b. Interviews and Discussions – Primary information have collected from personal and telephonic interviews and discussions with fund managers, fund of fund managers, investors, fund administrators and other working financial expert.
  - c. Observation: Observation methods are also used for collection of related information.
- **Secondary Data**
  - a. Published Sources : Books, Periodicals etc
  - b. Professional Bodies Circulars (Like CAIA & CFA)
  - c. Internet web sites of various research journals

## TECHNIQUES OF DATA ANALYSIS

The collected data has been processed and tabulated by the way of charts and tables. The analysis and data are simple statistical techniques such as percentages, ratio and average were used. Moreover the data was presented with the help of charts, flow charts and tables. The following analyses are used.

1. Alpha Risk
2. Beta Risk
3. Sharpe Ratio
4. Capital Asset Pricing Model (CAPM)
5. Value at Risk (VaR)
6. Black-Scholes Model
7. Absolute Return

### **IMPORTANCE OF THE STUDY**

Investing in Alternative investments has some obvious advantages when compared to traditional assets such as stocks and bonds. The main advantage is that alternatives exhibit low correlation with traditional asset classes. Another advantage is the historically strong return performance accompanied by generally limited volatility. Given the diversification benefits and good return prospects, Alternative investments are becoming an increasingly important asset class for investment portfolios.

### **SCOPE OF THE STUDY**

The study covered instruments in Alternative investments like private equity; Hedge funds, Commodities and Managed futures, REITS. The Most important determinant in deciding the Alternative investments is to understand the nature and the risks involved in that investment, first the size of the Alternative investment and its diversification impact should be decided. To decide the benefit of the diversification, the correlation with the market and other assets should be determined. Any investor considering investment in alternative investments can utilize various quantitative methods for comparing the expected correlation of one asset class relative to the other.

### **LIMITATIONS OF THE STUDY**

This study is restricted to those companies, from where data can be easily available with minimum expenditure. For the said purpose various internet sites and research journals were taken for the collection of theoretical background. As it is Western theme and rarely any Indian contribution were noticed.

### **FINDINGS**

#### **Alternative Investments in Indian Capital Markets**

1. The Alternate investment avenues where there a regulatory framework is not readily available can pose even more complexity. The regulatory objectives, unless well coordinated, can pose untold complications, and pre-empt the evolution of maturity in the market. That there are certain areas of the Indian market which need to improve in order to encourage Indian alternative investment market activity mainly revolving around ease of access and investment flexibility since equities will continue to present the best strategy for Indian-based investment in the near future.

India is pretty much an equity story but the dire need is to develop and induce liquidity in other asset classes.

2. The Assets under management (AUM) at India-focused hedge funds were about US\$ 7.3 billion by the end of 2007 and were up by as much as 23% in 2010. Indian Hedge funds will grow rapidly despite a hesitant attitude from the country's regulators, industry participants said on the study, as investors keep piling money into the nascent industry.
3. The stock index futures ranked as the most popular and preferred type of equity derivative, the second being stock index options and the third being options on individual stocks. Considerable interest exists in all the three types of equity derivatives mentioned above. The fourth type, viz. individual stock futures, was favoured much less. It is clearly revealed that there was wide recognition of the need for all the three major types of financial derivatives, viz., equity derivatives, interest rate derivatives and currency derivatives.
4. There are over 366 PE firms currently operating in India and another 69 have raised or are in the process of raising funds, cumulatively offering a corpus of USD 48 billion for investments in India from July 2007 through December 2010. The Indian market for PE remains very positive with Infrastructure, Retail and Consumer related Media and Financial Services being sectors of focus going forward. Hence PE houses expect increasing competition and therefore establishing a local presence in India and identifying the right country head would be important for future success in this market.
5. In Indian real estate, assets are kept outside the financial market and not leveraged for investment purposes. The Government should permit the setting up of a Real Estate Investment Trust (REIT) which should be regulated by SEBI in order to open the investment floodgate for the real estate sector. The REIT would operate like a mutual fund, where investments of individual investors are consolidated to invest in real estate, rather than stocks of companies.

Finally Indian regulators should appoint committee to study and confiscate all hindrances in establishing Alternative Investments in Indian capital market in future.

**Hence the hypothesis “Alternative Investment will be the best option to minimize the risk for Indian Institutional Investors in future” is accepted.**

### **Hedge Funds**

1. 90% of respondents are based in Europe of which 31% are investors, 38% are Fund of Hedge fund managers and 31% are Hedge fund Managers. Nearly 40% of respondents are CEO and Head of reporting services. Nearly 60% of the respondents are with Assets under Management of between 100 Million to 10 Billion Euro.
2. The maximum drawdown is regarded as the most important indicator where more than 63% of respondents consider followed by funds volatility (53.7%) and return persistence (49.4%). The tests such as skewness and kurtosis are not of particular interest to the hedge fund community. The Hedge fund managers, Fund of Hedge

fund Manages and investors prefer simple and informative return indicators in return analysis.

3. More than 66% of respondents believe that stress tests are of means of assessing a hedge fund's extreme risk. This overwhelming approval of stress tests is found industry-wide; investors and hedge fund managers agree on their importance.
4. More than 40% of all final hedge fund investors indicate that they do not know how the Value-at-Risk (VaR) information is calculated. Fund of hedge fund managers seem to be somewhat better informed, with only 20% unaware of how VaR is calculated. Given the relative importance of Value at-Risk measures, the study attempt to conclude whether investors and fund of hedge fund managers are aware of the models used to calculate Value-at-Risk as it appears in hedge fund.
5. Investors (more than 55%) and Fund of Hedge fund Managers (45%) are much more convinced of the importance of Beta Analysis both Liner and Non-Linear Factor Models than hedge fund managers (responded only 20-30%). This emphasizes that beta analysis using factor models is considered important, with non-linear models slightly preferred.
6. More than 70% of the industry's opinions are use of alpha in hedge funds. The result is clear with regardless of the professional group; alpha analysis is considered very important and appears to be more important than the factor analysis itself. But important segment in the mind of the hedge fund community is which method should be used to calculate a fund's alpha.
7. It is widely accepted that hedge funds returns are not normally distributed because of the fact that 60% of the hedge funds community in the study do not know to measure non-normality.
8. 70% of the respondents fully or largely agree with the statement that return smoothing is a significant issue for measuring hedge fund performance risk. Nearly 57% express that these sophisticated measures could be manipulated. The main reasons for the smooth returns of hedge funds indicate the linear extrapolation of illiquid asset prices.
9. More than 80% of investors classify liquidity risk as "very important". Liquidity Risks are of particular importance to hedge funds.
10. More than 67% consider on average liquidation periods indicator one of the most important liquidity risk indicators. Information on the percentage of hard-to value assets of the portfolio is also perceived to be important. Statistical tests such as the Ljung-Box test play only a minor role for the industry
11. 63% of the respondents agreed that Leverage risk is a major risk component for hedge fund investment strategies. Leverage risk is better reflected in hedge fund managers than Liquidity risk. The study also concludes that Off Balance sheet leverage risk indicator will be a better option than other risk indicators.
12. 77% of respondents are of opinion that pricing and valuation are considered most crucial elements of operational risks. Operational risk is the most intangible risk for

hedge funds because it is more difficult to comprehend than risk related to a fund's liquidity.

This study also shows that inappropriate performance measures prevail in the hedge fund industry. This study also concludes that the quality of hedge fund transparency is perceived to be an important indicator of a fund's overall quality and a crucial investment criterion. **Hence the Hypothesis number two “Transparency in Hedge funds will yield performance and effective measurement of risks” is accepted.**

### **Derivatives**

1. 33.9% of institutions permit their asset managers to use derivatives. Responses ranged from 59% granting permission among large institutions (market value greater than \$250 million) followed 48% in the medium (\$50 million to 250 million) and 13% in the small (less than 50 million) institutions. The use particular types of derivative instruments to manage exposure across four broad classes of financial price risk foreign currency, interest rate, and commodity and equity risk. For each source of risk, participants ranked their usage of seven types of derivatives instruments – forwards, futures, swaps, OTC options, Exchange-traded options, structured derivatives and hybrid derivatives.
2. 76% of all derivatives users in this study manage foreign exchange risk using some sort of foreign currency derivatives. The percentage makes foreign currency derivatives the most commonly used class of derivatives among the respondents.
3. Among the derivatives users in the study 73% indicate that they manage interest rate risk. Surprisingly, the overwhelmingly popular choice among instruments in this area is the swap.
4. In this commodity price risk is managed using derivatives by just 37% of the derivatives users. Among instruments in this risk class, futures contracts are the most popular derivative. Of all commodity derivatives users, 42% rank futures as their first choice among commodity derivative instruments with an additional 23% ranking them as a second or third choice.
5. Equity risk class as least likely managed in the derivatives. Just 12% of all derivatives users in the sample indicate usage of equity derivatives. Among the instruments used in this class, OTC options are most popular, being the first choice of nearly 50% of the users.
6. Focus on stabilizing cash flows is consistent with standard economic explanations of the potential benefits of hedging, such as reducing expected taxes and financial distress costs, ensuring sufficient internal funds to carry out strategic planned investments and reducing value losses that arise from conflicts between the interest of bond holders and share holders.
7. 70% of the derivative users strongly believe that the current accounting rules cause distortions in respondents hedging activities. Ideally, new rules for the accounting treatment of derivatives should be designed so that they do not distort the hedging behaviour that the firms would otherwise find economically optimal.

8. The respondents shows that most frequently cited motivations for transacting in the foreign currency derivatives markets are for the hedging of contractual commitments (91% hedge frequently or sometimes) and anticipated transactions expected within the year (91% hedge frequently or sometimes).
9. 11% to 12% of the firms report “frequently” altering the size or timing of hedges based on a market view on the exchange rate.
10. 84% of the firms hold at least some derivatives with maturities less than 90 days; at the other extreme, only 30% of the firms hold any foreign currency derivatives with maturities greater than three years.
11. Regarding the hedging each different type of exposure, 67% cite Options in the case of hedging competitive/economic exposure. Options are widely thought to be better suited than forwards/futures and swaps for hedging anticipated transactions, particularly those with longer maturities, as well as competitive/economic exposure.
12. 83% using interest rate derivatives responded that using these derivatives to swap existing floating-rate debt for fixed-rate debt.
13. 16% respondents reported that they managed equity exposure with derivatives, while another 3% reported that they are intending to use equity derivatives in the next year. Nearly 80% reported that they do not use equity derivatives. equity exposure is the class of risk least commonly managed by derivatives.
14. 44% of respondents is of opinion that of hedging future share repurchases with equity puts.
15. 76% of respondents reported that they are having documented policy, out of which 51% of respondents confirmed that have no preset schedule, while 29% reported that declares either monthly or quarterly. Hence it is determined that respondents are having updated documented policy but there is no regular schedule for reporting to the board of directors.
16. Commercial banks (89%) were rated as a primary source as a source of derivatives and Special-purpose vehicles has yet to capture a significant portion of the market.
17. 22% of the firms insist on a rating of AA or above for the counterparty and 73% of the firms insists on A or above. 40% insist on a rating of AA or above, Hence the policies become even stricter for derivatives with maturities greater than 12 months.
18. 42% of the firms cited the dealer as the most important source.
19. Regarding the riskiness of derivatives. 48% reported using stress testing or scenario analysis and 35% of the respondents reported using value-at-risk. The respondents appear to be employing sophisticated methods of risk measurement; they do not seem to be announcing such activities to investors and/or regulators.
20. According to the 67% of the participants view their derivatives as transactions linked to specific underlying corporate exposures.
21. 66% of non-users of derivatives nearly 45% of all them ranked they do not have exposure in using derivatives as the most important reason, with an additional 21%

citing this as the second or third most important reason for not using derivatives. The respondents currently not using derivatives will begin to use them as knowledge of these instruments increases and public perception of derivatives improves.

With all the above discussions the study concludes that **Hypothesis number three “Rational selection of Derivative instrument results in Hedging Risk” is accepted**

### **Private Equity**

1. 60% of respondents are from Endowment, 20% are from Pension funds and remaining 20% are from other Institutions. Nearly 64% of respondents are with Assets under management of between \$0.5 Billion to \$ 5 Million. The public information regarding investors’ perceptions in Returns, Risk and management of risk in Private Equity Investing.
2. 30% of investors allocated 10-15% to Private Equity; 23% of investors allocated to 15-20% of Private Equity and 23% of investors allocated 5-10% to private equity.
3. 55% of Investors are currently above their target allocation and 45% of investors are below target allocation.
4. 49% of investors had unchanged the allocation, 34% of investors recently increased allocation to Private Equity an 14% of investors said they will increase their allocation.
5. 32% of investors have been investing in Private Equity for 5-10 years, 24% for more than 20years. The biases/characteristics in the sample set, which is focused on investors that invest in private equity.
6. Private equity averaged the highest expected return ranking relative to other asset classes, followed by venture capital, and hedge funds; 80% ranked PE in the top 3, 67% for venture capital, and 37% for hedge funds. Thus the investors perceive private equity to be an absolute and relative attractive asset class that generates high absolute and relative returns.
7. 57% expect Private Equity annualized net returns to be between 15% and 20%; 31% expect returns between 10% and 15%. Broad categories of private equity returns, risks, and other qualitative benefit which highlights the private equity returns is high relative to other asset classes.
8. 44% categorized Private Equity as an attractive (returns outweigh risks) asset class, and 6% said it was the most attractive; 38% of investors categorized as Fair (returns justify risks) only 9% categorized it as unattractive (risks outweigh returns). Investors perceive private equity to be an attractive asset class where high returns outweigh high risks.
9. The Private equity and real estate tied for a second place ranking of expected risk relative to other asset classes (only 55% had PE ranked in the top 3); venture capital was ranked most risky (74% had it in the top 3) Similarly, private equity was ranked second most difficult asset class to manage/measure risk (over 75% ranked it in the top 3), following venture capital (over 95% ranked it in top 3), and before third place ranking by real estate (39% ranked in top 3). Investor’s view of private equity

investing as risky and an asset class where risk management and measurement is difficult. However, it is not viewed as the most risky asset class or the most difficult asset class to manage or measure risk

10. The perceived positive correlation between PE and S&P returns; 72% assumed correlation above 0.5 (39% assumed between 0.51 and 0.75; 33% assumed between 0.76 and 1.0)
11. The illiquidity and leverage were tied with the highest ranking of most significant risk factors in private equity investing (over 75% of Investors ranked both in the top 3), closely followed by Fund Managers (over 65% ranked it in the top 3) . It indicates that illiquidity and lack of measurement or accurate residual valuation are major risks to PE investing
12. The emerging market focus was the fund characteristic that was ranked as the highest risk (over 95% ranked it in the top 3), with micro-cap and high growth focus ranked second and third, respectively (over 70% ranked both in the top 3).
13. Initial diligence was ranked the most important in management of PE risk (ranked in the top 3 by 85%), followed by diversification (ranked in the top 3 by 74%) and Fund Managers relationships (ranked in the top 3 by 60%)
14. The benchmark variance was ranked as the most used to measure PE risk (76% ranked it in the top 3).
  - a. The different benchmarks that were provided, which includes:
  - b. Public market indexes (S&P, Wilshire, Russell) plus a premium of 3-5%
  - c. Comparable peer benchmarks by vintage year and quartiles provided by Cambridge Associates or Venture Economics
  - d. IRRs and multiples (DPI, TVPI) over time
  - e. Some also cited unique consultant benchmarks or an absolute return level
15. Fund reports ranked as the most important piece of information to best help manage risks (almost 90% ranked it in the top 3), followed by advisory meetings and annual meetings (approximately 60% ranked both in the top 3);
16. Initial diligence was ranked as the activity where the most time was spent (over 90% ranked it in the top 3), followed by individual fund monitoring (over 80% in top 3) and portfolio monitoring (over 60% in top 3).

The investor perceptions of return, risk and risk management in private equity investing are one that will continue to yield returns and grow as the asset class grows. **Hence, Hypothesis number four “Investors’ perception and expected returns in private equity investment outweighing high risk” is accepted.**

#### **REITS (Real Estate Investment Trusts)**

1. The current financial crisis in the US capital market especially US-REITs which was the rapid growth of the outstanding stock mortgage debt. large regulated financial institutions increased their share of mortgage debt to total assets instead of

diversifying their mortgage risk exposure through securitization and sales to a broad base of investors.

2. The suitability of four widely used real estate price indices (the S&P Case-Shiller Index; the FHFA index; the NCREIF NPI; and the historical NAREIT series) for valuing and monitoring the credit risk of U.S. mortgages. Four properties of indexes: unbiased estimation of the drift of real estate price dynamics; unbiased estimation of the volatility of real estate price dynamics, their suitability for measuring correlation between interest rates and real estate prices; their suitability for measuring growth dynamics, or the effects of real options components of real estate values.
3. Real Estate mortgage holding has decreased from 36% to 33% from 2007 to 2010 in Q2. Most of the mortgages that were held by financial institutions were held in the form of AAA rated mortgage backed securities.
4. The sum of seriously delinquent and non-accrual mortgage assets held by FDIC insured institutions. Delinquencies and fore closures remained substantially below 1% of the aggregate asset holding for the fourteen years following the resolution of the Savings and Loan(S&L) crisis in 1989. The actual credit experience of the mortgage stock of FDIC insured financial institutions in the U.S. turned out to have been an order of magnitude worse than the experience of the prior period and is currently just over 3%.
5. The rapid growth of residential mortgages from 1999 through 2006 was not accompanied by an increase in leverage ratios and the aggregate leverage remained approximately constant in the U.S. housing market at a long-run average of 36.6%. From 2006 onward, however, leverage ratios grew about 17% to the current level of 52%. Thus the increase in leverage is likely to be a function of the inability of mortgage borrowers to re-balance the capital structure of their residential real estate investments as house prices fell rather than due to the relaxation of credit underwriting standards in the latter stages of the credit boom.
6. After 2006, however, leverage ratios rose rapidly as the REIT total returns index moved into negative territory. The inability of commercial borrowers to re-balance their capital structures rather than important weakening of commercial mortgage underwriting.
7. The common econometric methodology that underlies the two indices, the S&P Case-Shille indices and the HPI often does not agree. The FHFA at least partially; explains observed differences that have ranged from 3% to 4% in growth rates. Hence the observed differences in these indices are that the underlying data sources differ.
8. It appears to have been five prolonged episodes of significant house price appreciation since 1930 especially current; episode is associated with an important expansion in the availability of mortgage credit. The long returns cycles in this study concludes that long historical data series would be required to obtain robust estimates of the long-run drift of residential price dynamics and that this drift is likely to be time varying.

9. The pre and post crisis commercial delinquency performance with prior historical performance. This indicates that the period of accelerations in returns in commercial real estate are shorter in duration than those of residential real estate episodes, with the exception of the crisis episode. Where those only three significant acceleration episodes in commercial real estate return: in the high inflation period of the late 70's and early 80's; in high-tech boom of the late 90's; and the current episode.
10. One difference of the NAREIT returns series over the NCREIF NPI series. These indices make it difficult to reliably make inference about the dynamics of the stock of commercial real estate in the U.S., even in the sense of having a stable and robust estimate for the drift in these dynamics.
11. The Standard and Poor's estimated asset class returns and volatility for four asset classes: Housing, (9.31% 2.77%) Bonds (5.97% 3.47%), Stocks (5.91% 14.72%) and REITS (11.22% 15.22%). The residential real estate investments earn higher returns with less risk than stocks or corporate bonds. The only comparable level of returns is for REITS; however, they are substantially more volatile than the other three investment classes.
12. The long run average by property-type ranges between 8.93% for multi-family and 5.75% for office properties over the period. The mean volatility ranges from a high of 16.8% for industrial REITs to a low of 10.7% for multi-family REITS and there is considerable volatility across REITs within property-type groups with standard deviations ranging between 3.1% and 11.3%. These volatilities would be expected to reflect the entire appraisal in smoothing problems. The REIT average volatility estimates exceed those computed using the NCREIF indices and for most property-types are nearly twice as large. The REIT volatility estimates are likely to be a downwardly biased estimate of the true idiosyncratic property-specific volatility because REIT portfolios are diversified.

The properties include the fact that none of the indices adequately address the index number problem for real estate assets. The price metrics thus mix price and quantity dynamics in non-transparent ways leading to likely biases in the measurement of the correlation between real estate prices" and economic fundamentals, such as interest rates, and expected skewness in real estate price distributions arising from the real option components of real estate values. **Hence, the Hypothesis number five "Accurate Price measurement in US-REITs can stabilize present financial crises" is accepted".**

## SUGGESTIONS

### Alternative investments in Indian capital market

1. The appointment of the Financial Sector Legislative Reform Commission may well present an opportunity to think through such issues with a fresh and open mind. It is an opportunity that could mark a new era for alternative investments in India.
2. The objective of the SEBI should make both derivatives market and cash market fair, efficient and transparent.

3. The Government should permit the setting up of a Real Estate Investment Trust (REIT) which should be regulated by SEBI in order to open the investment floodgate for the real estate sector. The REIT would operate like a mutual fund, where investments of individual investors are consolidated to invest in real estate, rather than stocks of companies

### **Hedge funds**

1. First, great differences between hedge fund managers' perceptions of relevant information disclosure and their investor's needs suggest that the industry should rethink its overall disclosure practices. Hedge fund managers should take their investors' demands for more information seriously and improve disclosure on liquidity risks, leverage risks, portfolio composition, and valuation frameworks.
2. Second, hedge funds and funds of funds should move to more appropriate risk and performance measures when disclosing their returns to investors.

### **Derivatives**

Awareness in derivative instruments has to increase with regard to improving public perception on derivatives.

### **Private equity**

1. The valuation guidelines, reporting standards, and increased transparency and communication between investors and fund managers will aid in better understanding and managing risks in private equity investing.
2. The improvement in understanding and managing of risks in private equity investing will benefit the constituents of investors as they continue to invest in private equity.

### **Reits (real estate investment trusts)**

There is a need to re-evaluate the use of these indices for mortgage risk management and to develop dynamic hedonic price indices that both address the index number problem and allow for flexible specifications for price and quantity dynamics.

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