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**INVESTMENT SECTORS AND THEIR POTENTIAL FOR THE LIFE  
INSURANCE COMPANIES**

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**Background**

India is a developing economy with liberalization in full swing. Foreign funds are investing via Foreign Direct Investment Route (FDI), FII debt, FII equity, Private equity, NRI deposits etc. The high foreign exchange reserve base of more than \$ 100 bn. provides comfort to Indian imports. The economy grew by impressive growth rates of 6% and 5.8% in the first two quarters of 2002-03. The growth was 5.6% in 2001-02. The GDP growth of 8% now looks achievable. The inflation is also at moderate levels in the vicinity of 5 %. After 23 years, India had a current account surplus in 2001-02. There are plans to prepay expensive foreign loan considering the comfortable level of forex reserves. However the state of fiscal deficit has been an issue of concern. Fiscal Deficit has been targeted at Rs 1,53,637 crore, or 5.6% of GDP for the current year.

The stable state of economy augurs well for the investment sectors. The investment sectors in India have been traditionally dependent on the Government Policies. The deregulation of various industries has rejuvenated the markets. However the scams / irregularities have sometimes left the markets gasping for breath. Hopefully with the alignment with global markets, maturing and widening of the Indian markets, the efficiency of markets would improve in future. This implies that information would be more widely spread due to long term investors putting more time and effort into research and price discovery.

**Investment Objectives**

Institutional investors are principally large investors with large corpus of funds. They channel the savings from small investors to the real economy. The basic objective is to meet the commitments made and reasonable expectations of the original investors. Original investors may be policyholders, shareholders, bondholders, deposit holders etc. The principle objectives of investment can therefore be defined as:

1. Meet the liabilities as they fall due. The liabilities are estimated by the commitments made and reasonable expectations of the original investors.
2. Maximise returns subject to meeting the liabilities to enhance returns to existing customers and to attract potential customers
3. Minimise the risk of not meeting the liabilities

### **Legislative Requirements for Insurance Companies**

The principle regulations governing Investments for Insurance Companies are:

1. Insurance Act, 1938
2. Insurance Rules, 1939
3. IRDA (Investment) Regulations, 2000

The asset class wise limits are imposed by IRDA regulations for Life Business, Pension & General Annuity Business, Unit Linked Business, General Insurance and Reinsurance.

The categories of asset classes in the regulations are:

- Government Securities – Central / State
- Approved Securities
- Infrastructure and Social Sector
- Approved Investments

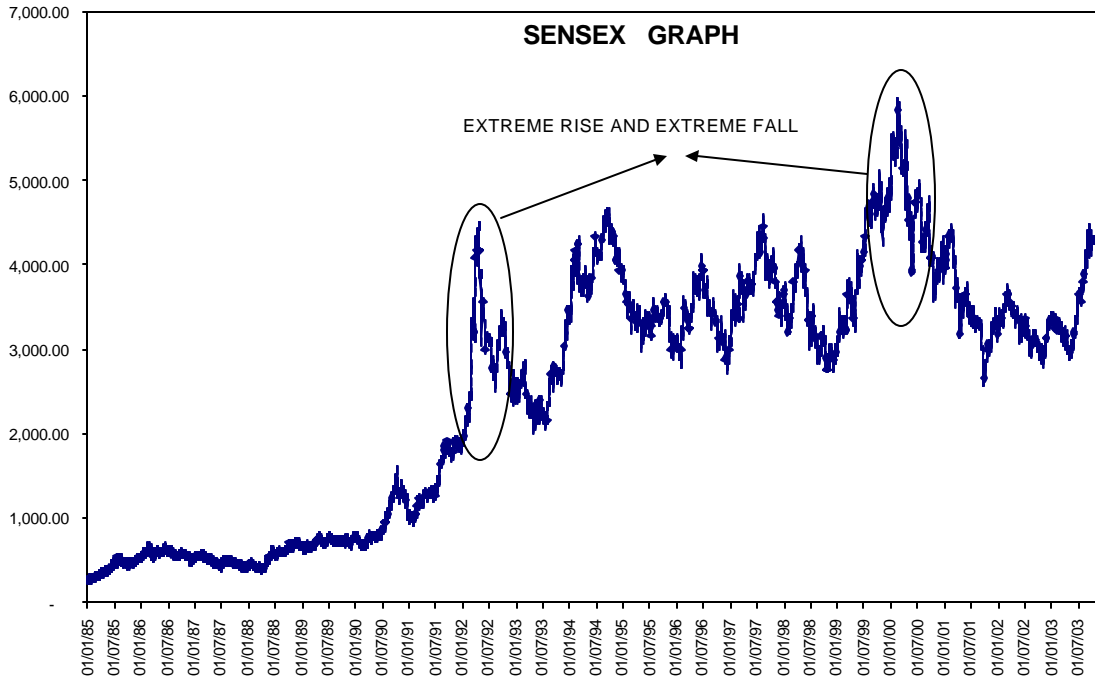
The regulations also specify exposure / prudential norms, returns to be submitted by Insurer and the manner of constitution of the Investment Committee.

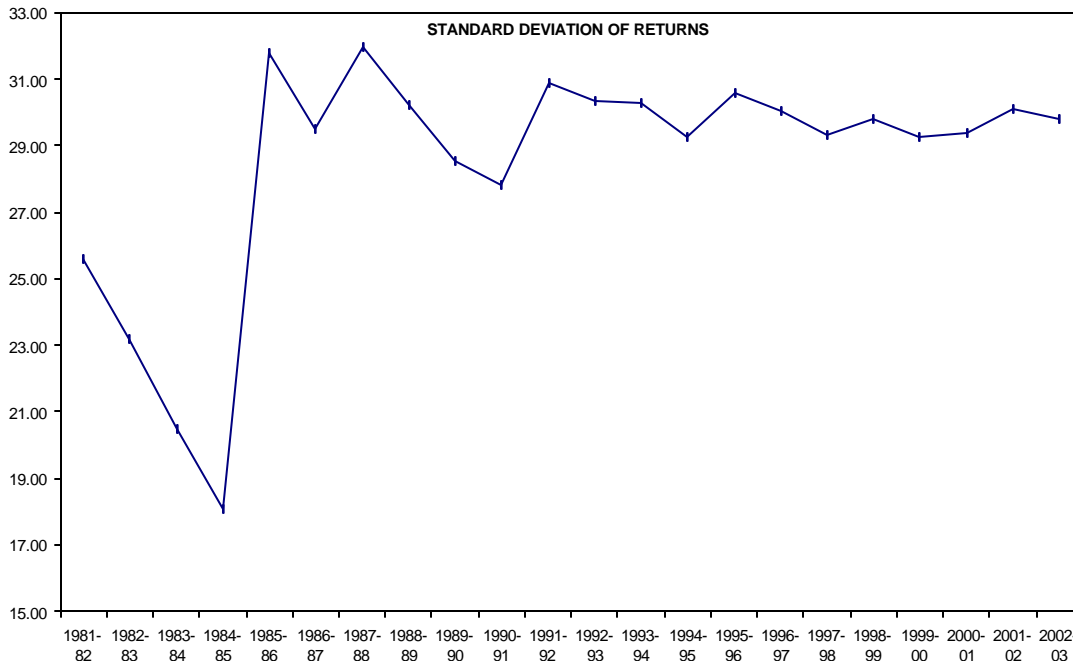
### **The Investment Options**

The history of the investment markets is chequered with ups and downs. However the history could be a good guide for the future after allowing for expected changes. The past data on various investment sectors has been collated and analysed. The sector wise results are as below:

1. **Equity:** Mumbai Stock Exchange is the oldest in Asia. It started functioning in 1875 and now has more than 125 years of experience. Historically the sensdex, the index of 30 stocks on Mumbai stock exchange, has been the barometer of the Indian Stock Market. The graph below depicts the historical trend of the sensitive index (sensdex). There have been times of extreme volatility, but the long-term trend is definitely positive. The markets have been subject to scams, insider trading, IPOs of fly by night operators, unscrupulous brokers, herd trading etc. But the recent uptrend and success of IPOs clearly indicates that investors still have faith in the market.

For purpose of analysis, the average yearly sensdex values, as obtained from RBI's statistical handbook, and dividend yields have been used to calculate the average yield on equity. The average nominal return (based on long term single investment) for the period 1979-80 to 2002-03 comes to be 16.73% p.a. with a standard deviation of 29.80%. The coefficient of variation of 1.781 (ratio of standard deviation to average nominal return) is highest for equity.





If we analyze the rolling volatility, the trend indicates the volatility level has stabilized to around 29-30%. This provides fairly reliable base for projecting future returns on equity investment.

The period from 1988-89 to 1994-95 was boom time with sensx increasing by 5 times. The rally was un-sustainable in absence of real fundamental reasons. The period 2000-01 to 2002-03 saw the fall of the sensx thus providing negative returns. Over 10 year rolling period the nominal return is observed to be near 21% p.a.

Of the 24 years analysed, in 15 years equity returns have been able to beat inflation (based on CPI for Industrial Workers). The average inflation for the whole period was 8.32% p.a. The average real return on equity was 8.13% p.a.

If regular investment plan (equal investment every year) is considered, the average nominal return comes out to be 15.15%. This is lower than average nominal return i.e. 16.73%, based on single investment in the beginning of the period. The reason being that Investment at a high value would appreciate less than an investment at a low value. There have been more periods of high value than that of low value thereby lowering the average return under regular investment plan.

As per current tax laws, the dividends are tax free, short term capital gains are taxed at applicable income tax rate and long term capital gains tax @ 10% without indexation of costs or @20% with indexation of costs.

2. **Bank Fixed Deposit:** Banks were considered to be a safe haven till about 5 years ago when all banks were in the Public Sector. There was an implicit guarantee of the Government of India that any failed bank would be funded by the govt. or merged with

another PSU bank. The advent of professional private sector banks has changed the scenario completely. The focus is now on quality of loan portfolio of the banks. The level of non-performing assets has become a key indicator of security of funds invested in a bank. The private sector banks with low NPA's and good capital adequacy, are considered on equal terms with public sector banks.

The interest rates on bank deposits (mainly public sector) for the period 1970-71 to 2002-03 have been studied. The impact of interest rates on the returns can be considered as equivalent to single year investment in bank Fixed Deposits and reinvestment at the end of the year at new interest rates. The results are as below:

a) **Maturity 1-3 years**: The interest rates started at a level of 6% in 1970-71 rose to a peak of 12% by 1991-92. Post liberalization initiation, the rates have fallen to be in line with global interest rates. The average interest rate for the 33-year period has been 8.58% p.a. with a standard deviation of 1.87%. The coefficient of variation is 0.218 indicating little volatility. However the latest trend has been that of increasing volatility due to frequent revision of interest rates by banks.

The real interest rate has been negative for 12 years of the 33 years. The average real interest rate was only 0.27% p.a.

b) **Maturity 3-5 years**: The interest rates started at a level of 7% in 1970-71 rose to a peak of 13% by 1991-92. Post liberalization initiation, the rates have fallen to be in line with global interest rates. The average interest rate for the 33-year period has been 8.51% p.a. (lower than deposits for 1-3 years) with a standard deviation of 1.33%. The coefficient of variation is least 0.156 indicating little volatility. However the latest trend, of 5year rolling volatility, has been that of increasing volatility due to frequent revision of interest rates by banks.

The real interest rate has been negative for 15 years of the 33 years. The average real interest rate was only 0.19% p.a.

c) **Maturity >5 years**: The interest rates started at a level of 7.25 % in 1970-71 rose to a peak of 13% by 1991-92. Post liberalization initiation, the rates have fallen to be in line with global interest rates. The average interest rates for the 33-year period has been 9.99% p.a. with a standard deviation of 1.68%. The coefficient of variation is 0.168 indicating little volatility. However the latest trend, of 5 year rolling volatility, has been that of increasing volatility due to frequent revision of interest rates by banks.

If we consider regular investment plan for the 5-year bank deposit under the assumption that deposits are renewed for another 5 years on maturity at the prevailing interest rate, the average return was 10.98% p.a.

The real interest rate has been negative for 9 years of the 33 years. The average real interest rate was 1.68% p.a.

The interest earned on bank deposits is exempt subject to limits specified by Section 80L of IT Act, 1961.

### 3. Call Money Market

The call market has been a function of the liquidity in the system. The whole decade of 1990 has been that of high volatility in the call money markets. It was due to the high Statutory Liquidity Ratio / Cash Reserve Ratio requirements for the banks. In 2000's the rates have been stable due to the consistent policies of RBI. The average return over the 33 year period from 1970-71 to 2002-03 has been 9.61% p.a. with a standard deviation of 3.33%. The coefficient of variation at 0.347 is high indicating inherent volatility due to short-term nature of investment.

If we consider regular investment plan for the call money market, the average return was 10.23% p.a.

The real return has been negative for 11 years of the 33 years. The average real return was 1.29% p.a.

### 4. T-Bills Market

The period used for analysis is 1996-97 to 2002-03 based on availability of data. The T-Bills market has been a function of the liquidity and CRR / SLR requirement of banks. There are T-Bills of diverse maturities in the market enabling RBI to manage the liquidity.

a) **Up to 14 days:** The average nominal return for the period has been 7.15% p.a. over the 7 year period with a standard deviation of 1.21%. The coefficient of variation of 0.169 is very low indicating least volatility. The real return of 0.81% p.a. indicates broad linkage with inflation.

b) **15-91 days:** The average nominal return for the period has been 8.04% p.a. over the 7 year period with a standard deviation of 1.38%. The coefficient of variation of 0.172 is very low indicating low volatility. The real return of 1.71% p.a. indicates broad linkage with inflation.

c) **92 - 182 days:** The average nominal return for the period has been 8.64% p.a. over the 7 year period with a standard deviation of 1.65%. The coefficient of variation of 0.192 is medium indicating medium volatility. The real return of 2.31% p.a. indicates inflation excess returns.

d) **183-364 days:** The average nominal return for the period has been 9.06 % p.a. over the 7 year period with a standard deviation of 1.88%. The coefficient of variation of

0.207 is medium indicating medium volatility. The real return of 2.73% p.a. indicates inflation excess returns.

## 5. GOI Dated Securities

The dated securities are a principal source of finance for Government of India. Thousands of crores are borrowed every year through RBI to fund the Govt.'s finances. The 32-year period from 1970-71 to 2001-02 has been studied for different maturities of GOI securities. The yields considered are YTM's and exclude any capital appreciation gains before maturity. The results are:

- a) **Short Term (1- 5 years)**: There are two ranges of analysis – lower and upper. The lower average yield is 5.74% p.a. with standard deviation of 1.86%. The coefficient of variation for lower range is 0.324. For the upper range the average yield is 11.64% p.a. with standard deviation of 6.54%. The coefficient of variation for this range is 0.562. The volatility has been declining recently as compared to the past. The reason being that interest rates are now more or less market determined. Therefore there are less abrupt changes in the prices of the bonds. The real average return for the lower range has been –2.74% p.a. whereas for the upper range it was 3.17% p.a.
- b) **Medium Term (5 - 15 years)**: There are two ranges of analysis – lower and upper. The lower average yield is 6.60% p.a. with standard deviation of 2.03%. The coefficient of variation for lower range is 0.308. For the upper range the average yield is 10.07% p.a. with standard deviation of 3.70% p.a. The coefficient of variation for this range is 0.368. The volatility has been declining recently as compared to the past. The reason being that interest rates are now more or less market determined. Therefore there are less abrupt changes in the prices of the bonds. The real average return for the lower range has been –1.87% p.a. whereas for the upper range it was 1.60% p.a.
- c) **Long Term (15 years and above)**: There are two ranges of analysis – lower and upper. The lower average yield is 8.05 % p.a. with standard deviation of 2.26%. The coefficient of variation for lower range is 0.281. For the upper range the average yield is 9.96% p.a. with standard deviation of 2.96%. The coefficient of variation for this range is 0.297. The volatility has been rising recently as compared to the past. The reason being that long term bonds are more volatile and GOI has been focusing on long term borrowing to lock in at low interest rates. The real average return for the lower range has been –0.43% p.a. whereas for the upper range it was 1.49% p.a.

The lower and upper ranges mentioned above relate to minimum and maximum yields for the period under consideration and not the term of the security.

## 6. Mutual Fund

UTI commenced its operations from July 1964 .The impetus for establishing a formal institution came from the desire to increase the propensity of the middle and lower groups to save and to invest. UTI came into existence during a period marked by great political and economic uncertainty in India. With war on the borders and economic turmoil that depressed the financial market, entrepreneurs were hesitant to enter capital market. The already existing companies found it difficult to raise fresh capital, as investors did not respond adequately to new issues.

UTI commenced its operations from July 1964 *"with a view to encouraging savings and investment and participation in the income, profits and gains accruing to the Corporation from the acquisition, holding, management and disposal of securities."* Different provisions of the UTI Act laid down the structure of management, scope of business, powers and functions of the Trust as well as accounting, disclosures and regulatory requirements for the Trust.

UTI's US-64 has been a harbinger of MF industry in India. Although the NAV of this scheme did not reflect the underlying assets, still it is a useful indicator of volatility of Mutual Fund Schemes. The average yield for the 32-year period from 1970-71 to 2001-02 is 11.53% p.a. with a standard deviation of 3.24%. The real average yield is 3.32% p.a. The volatility has been showing a rising trend due to direct linkage of NAV with underlying assets in recent times.

## **7. Loan – Long Term Mortgages**

The lending rates (prime) of three Financial Institutions – IDBI, IFCI and ICICI over 32 year period from 1970-71 to 2001-02 have been observed. The rates started at a level of around 8.5% p.a. in 1970-71, reached a peak of 20% p.a. in 1991-92 and are now around 11-12% p.a. The average over the whole period are 12.91% p.a. for IDBI (3.08% SD), 13.60% p.a. for IFCI (2.71% SD) and 13.07% p.a. (2.60% SD).

The average real return for IDBI and ICICI has been around 4.5% p.a. but for IFCI it has been around 1% p.a. The volatility trend indicates increasing volatility in recent times due to frequent revision of lending rates based on cost of capital.

## **8. Corporate Bonds**

The Corporate Bonds yields as a spread over yield of equivalent term Government Bond yield have been analyzed over period Jan 2001 – June 2003 based on information available from Fixed Interest Money Market Dealers Association of India website. As shown in the table below, AAA bonds yield is about 1.12% above the Govt. Bond yield. For other bonds the spread increases with lower rating. However the liquidity is a problem in corporate bonds as supply is limited in comparison to govt. bonds. The dealing charges are also correspondingly higher.

### **Average Spread Over Govt. Bond Yields - Basis Points**



**Period: Jan 2001 - June 2003**

Rating	1 year	2 year	3 year	4 year	5 year	6 year	7 year	8 year	9 year	10 year
AAA	112	112	114	111	109	109	108	110	111	112
AA+	155	157	160	158	157	160	160	163	164	166
AA	196	197	201	203	203	204	203	206	208	211
AA-	239	241	246	248	249	250	249	253	255	258
A+	300	303	318	324	327	329	328	330	332	336
A	359	377	392	402	407	410	408	413	414	416
A-	427	454	473	486	494	498	497	502	503	505
BBB+	543	547	552	557	553	559	557	564	566	568
BBB	551	582	610	626	639	643	644	647	648	651
BBB-	754	754	755	761	755	764	760	768	769	768

### **9. Property**

Investment in property is being viewed as a serious alternative to other forms of investment. As per Knight Frank (report for Quarter 2, 2003) property investors can expect yields of 12-14% p.a. on the investments. Property, like equity is expected to provide real returns in the long term. However there are associated risks with property that need to be considered. Liquidity is major constraint as finding a buyer at desired price is a time consuming exercise. This is primarily due to lack of transparency in the deals happening in the market. Even the deals reported may not be revealing the real transaction value.

The sector is primarily in unorganized market with few players in the organized market such as Ansals, DLF, Unitech etc. Each deal in the market is unique and depends on the location, quality of construction, negotiating skills, urgency of occupation of the property, stamp duty etc. There is total absence of homogeneous properties in the market except in small islands like builder flats, shopping malls. Therefore the yield of each property is function of various qualitative factors and cannot be compared with other properties. However there are certain prime areas / commercial business districts, where the properties can be assumed to be more or less homogeneous and returns offered by the properties therein are in the same range. The table below provides the trend of rental yields (gross of expenses and taxes) of commercial properties in Mumbai and Delhi (as provided by Colliers Jardine).

Location	1999	2000	2001	2002
<b>Delhi</b>				
Nehru Place	18%	17%	13%	12%
Connaught Place	13%	15%	13%	13%
Gurgaon	12%	13%	13%	12%
<b>Mumbai</b>				
Nariman Point	12%	14%	15%	13%
Worli	11%	15%	16%	12%
Bandra Kurla	10%	14%	14%	13%
Andheri Kurla	18%	22%	21%	16%

As expected the yields are highly dependent on location. During the past 5 years, majority of the transactions in commercial real estate market have been on a lease and license basis. The best possible approach, in absence of indirect investments such as securitised assets, real estate trusts / mutual funds, would be to identify suitable commercial space in a business district and rent it out to reputed AAA rated companies. The risk would be that of liquidity as there would be delays in identifying a buyer, negotiating terms, completing legal formalities. The capital value also fluctuates based on location, demand and supply. Management of the property would also consume management time.

The introduction of real estate mutual funds, as is expected to formalize shortly, would bring professionals into the field thereby spreading awareness and increasing transparency in the market.

## 10. Summary of Analysis

	Period	Mean Nominal Return	Standard Deviation	Real Return
<b>Equity</b>	1979-80 to 2002-03	16.73%	29.80%	8.41%
<b>Bank Deposits</b>	1970-71 to 2002-03			
1-3 years		8.58%	1.87%	0.43%
3-5 years		8.51%	1.33%	0.36%
> 5 years		9.99%	1.68%	1.84%
<b>Call Money</b>	1970-71 to 2002-03	9.61%	3.33%	1.46%

<b>T-Bills</b>	1996-97 to 2002-03			
14 Days		7.15%	1.21%	0.92%
15-91 Days		8.04%	1.38%	1.81%
92 - 182 Days		8.64%	1.65%	2.41%
183 - 364 Days		9.06%	1.88%	2.83%
<b>GOI Dated</b>	1970-71 to 2001-02			
Short Term		5.74% - 11.64%	1.86% - 6.54%	(2.57%) - 3.23%
Medium Term		6.60% - 10.07%	2.03% - 3.70%	(1.81 %) - 1.76%
Long Term		8.05% - 9.96%	2.26% - 2.96%	(0.36%) - 1.55%
<b>US – 64(MF)</b>	1970-71 to 2000-01	11.53%	3.24%	3.12%
<b>Loan – Long Term Mortgage</b>	1970-71 to 2001-02	12% – 13%	2%-3%	4 % - 5%
<b>Corporate Bonds</b>	Jan 2001 – June 2003			
AAA		1.12% + GOI	Higher than GOI	
AA+		1.60% + GOI	Higher than GOI	
AA		2.00% + GOI	Higher than GOI	
<b>Property</b>	1999-2002	11% - 18%	Unknown	7 % -9 %

## **11 Correlations Between Investment Sectors**

The correlation between investment sectors is determined by the common factors that affect the concerned investment sectors. The factors could be:

1. Income Tax incentives
2. Economic growth rate
3. Liquidity in the market
4. Confidence of the investors in an investment avenue
5. Risk
6. Government's Borrowing requirement
7. Risk Attitude of Investors

Based on the analysis, the correlation factors have been determined between the sectors as given below.

		Equity	Call Money	T - Bill				Bank Deposits			Lending Rates			UTI	GOI Dated Securities						
Correlation Coefficient				Days																	
			Upto 14	15 - 91	92 - 182	183 - 364	1-3 yrs	3-5 years	5+ years	IDBI	IFCI	ICICI	Yield	1 - 5 years	5-15 years		15 + years				
														Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
Equity		1	0.424	0.26	0.30	0.42	0.39	0.20	-0.12	0.28	0.35	0.28	0.48	0.34	0.20	0.25	0.26	-0.10	-0.06	-0.05	
Call Money			1	0.72	0.76	0.81	0.75	0.62	0.12	0.64	0.58	0.59	0.54	0.40	0.37	0.58	0.37	0.40	0.45	0.37	
	Upto 14			1	0.86	0.64	0.67	0.36	0.41	0.40	0.45	-0.20	-0.38	-0.88	-0.70	0.19	0.76	-0.59	0.81	0.09	
	15 - 91				1	0.92	0.95	0.74	0.78	0.78	0.84	0.38	0.27	-0.43	-0.44	0.53	0.55	-0.19	0.79	0.62	
	92 - 182					1	0.99	0.90	0.94	0.94	0.91	0.77	0.61	0.55	-0.21	0.74	0.26	0.13	0.65	0.87	
	183 - 364						1	0.89	0.92	0.93	0.93	0.76	0.61	0.34	-0.27	0.68	0.23	0.17	0.64	0.88	
T - Bill	1-3 yrs							1	0.61	0.88	0.90	0.96	0.87	0.80	0.57	0.79	0.58	0.86	0.82	0.88	
	3-5 years								1	0.67	0.44	0.56	0.44	0.09	-0.04	0.44	0.10	0.57	0.44	0.63	
	5+ years									1	0.83	0.89	0.83	0.57	0.32	0.60	0.41	0.63	0.64	0.74	
Bank Deposits	IDBI										1	0.95	0.93	0.78	0.53	0.76	0.66	0.81	0.80	0.87	
	IFCI											1	0.94	0.81	0.55	0.75	0.60	0.82	0.79	0.87	
	ICICI												1	0.88	0.65	0.74	0.69	0.75	0.71	0.80	
	Yield													1	0.83	0.70	0.70	0.75	0.68	0.72	
UTI																					
GOI Dated Securities	1-5 years	Lower	0.20	0.37	-0.70	-0.44	-0.21	-0.27	0.57	-0.04	0.32	0.53	0.55	0.65	0.83	1	0.53	0.84	0.53	0.65	0.50
		Upper	0.25	0.58	0.19	0.53	0.74	0.68	0.79	0.44	0.60	0.76	0.75	0.74	0.70	0.53	1	0.56	0.87	0.75	0.80
	5-15 years	Lower	0.26	0.37	0.76	0.55	0.26	0.23	0.58	0.10	0.41	0.66	0.60	0.69	0.70	0.84	0.56	1	0.58	0.77	0.61
		Upper	-0.10	0.40	-0.53	-0.13	0.13	0.17	0.86	0.57	0.63	0.81	0.82	0.75	0.53	0.87	0.58	1	0.88	0.96	
	15 + years	Lower	-0.06	0.45	0.81	0.79	0.65	0.64	0.82	0.44	0.64	0.80	0.79	0.71	0.68	0.65	0.75	0.77	0.88	1	0.91
		Upper	-0.05	0.37	0.09	0.62	0.87	0.89	0.89	0.63	0.74	0.87	0.87	0.80	0.72	0.50	0.80	0.61	0.96	0.91	1

The results can be inferred as:

- Equity market has maximum correlation with lending rates. This seems logical in the sense that when stock markets are booming, the savings are directed towards equity and borrowing demand rises thereby moving lending rates to high. The correlation with 3-5 yrs bank deposits is negative. If the bank deposit rates were high, investors would flock towards banks, as the risk is minimal.
- Call money returns have high correlation with T-bills as they operate in same short-term market.
- Bank Deposit rates are highly correlated with yields on 92-182 T-Bills. The correlation with equity returns is least.
- The lending rates are negatively correlated with 1-14 day T-Bills. It implies the logic that at times of high lending rates, the income of banks increases which they park in short term T-Bills before lending it further. This raises the demand of T-Bills and depresses their yield.
- The yield on UTI MF is highly negatively correlated with 1- 14 day T-Bills. This implies that large component of UTI MF consisted of these T-Bills. On rise in price of T-Bills (low yields), the NAV of MF rose to provide higher yield.
- Short Term Dated Govt. Securities have high negative correlation with 1- 14 day T-Bills
- Medium Term Dated Govt. Securities have low correlation with equity and 1- 14 day T-Bills
- Long Term Dated Govt. Securities have slightly negative correlation with equity returns indicating possible independence of the Government Securities and Equity Market. Banks are the main investors in Govt. Securities and by regulations they are prevented from investment in equity, beyond a certain limit.
- There is high correlation between yields of short term, medium term and long-term govt. securities.

## **Future Outlook**

The derivatives have emerged as major investment option. Their basic requirement is for risk mitigation. A desired combination of a derivative and underlying asset would be able to reduce downside risk leaving the upside potential open. IRDA is expected to allow derivatives investment to Insurance Companies.

Property is expected to become major thrust area with real estate mutual funds being allowed. This sector has potential for providing real long-term returns with reasonable security of capital due to the underlying physical asset. However before this can happen professional property people will need to develop offerings for institutional investors.

IRDA has also now allowed investment in MFs. These are good instruments for managing short-term investments. However entry / exit loads along with AMC fee may affect the returns. It may be worth seeing whether the charges paid to MF are recovered from the policy. Hedge funds are another kind of investment vehicle that promise positive returns under any circumstances. Their performance is measured on absolute terms irrespective of trends prevailing in the market. As against this, a mutual fund's performance is done on a relative scale vis-à-vis a benchmark index.

Overseas investment, at present is not permissible as per Insurance Act. However it would be good way to diversify systematic risk of investments in India.

## **Conclusion**

Nine investment sectors have been analysed : equity, bank fixed deposits, call money, T-Bills, Govt. Dated Securities, Mutual Fund, Lending, Corporate Bonds and Property. Equity offers the maximum return (along with maximum risk in terms of standard deviation). It is followed by long-term mortgages and UTI MF.

In terms of coefficient of variation (CV) that measures the standard deviation per unit of average return, T-Bills and bank deposits have lowest coefficient. This is followed by GOI Dated Securities. In between the dated securities, the short-term bonds have highest CV followed by medium term and long term. Equity has highest CV – almost 4.5 times the next highest of UTI MF.

Property can be assumed to provide real returns in the long term but substantial development of the market needs to occur.

The investment sectors in India offer opportunities for various risk appetites but compared to overseas markets the choice of investments is still limited. The Bank Deposit / T-Bills are the safest avenues for risk averse strategy. For medium risk strategy, one can invest in corporate bonds, Govt. dated bonds, mutual funds, lending and call money. For high-risk strategy, equity and property provide risk adjusted high-expected returns. Opportunities exist for entrepreneurs to develop different investment offerings to

the institutional investors through developments of trusts holding wide variety of property investments and securitisation of debt portfolios.

**Sources: Indiainfoline, Reserve Bank of India Statistics, Mumbai Stock Exchange, Insurance Act 1938, IRDA Regulations 2000**

### **About the author – Jim Thompson**

Jim Thompson is the current Appointed Actuary for the OM Kotak Mahindra Life Insurance Company. He has worked in India since May 2002. Prior to this he was a consultant to the Old Mutual group in Capetown South Africa for two years. He is from Australia, qualified in 1975 and spent 27 years with the National Mutual Life Association, which became part of the AXA group of companies in 1996. He held a number of senior management positions in the areas of life insurance, superannuation and investments with that company.

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Gautam is an Engineer in Electronics & Communication and MBA in Finance from Panjab University, Chandigarh. He has recently qualified as Associate Actuary with ASI. After he started writing exams in May 2001, he has cleared all 100, 200 and 300 series of the actuarial exams.

Gautam worked for Bharat Petroleum Corporation Ltd. for over 5 years. He was also involved in the prestigious CNG expansion program in the city of Delhi wherein he worked for Indraprastha Gas Ltd. The experience ranges from financial modeling, project finance, marketing, legal and operations. He is at present working for OM Kotak Mahindra Life Insurance Company in the Actuarial Function where he has handled assignments like research on investment sectors, investment linked product development, gratuity valuation model, zero coupon yield model etc.

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