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## Levels and Trends of Competition Among the Mutual Funds in India

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**Abstract:** The objectives of the present study are to examine the structure of the mutual fund industry in India and to analyze the state of competition among all the mutual funds along with between sector competition and within sector competition. The mutual fund industry in India is relatively adolescent compared to that of developed countries. Initially the industry was a state monopoly of Unit Trust of India. Later on, a few public sector institutions were allowed to operate. After 1993, when the industry was opened for the private sector, only then a real environment was created for the competition in the industry. In this study, the Normalized Herfindal-Hirshman Index of concentration was used to estimate the levels of competition among the mutual funds. The levels of competition and their trends have been obtained for the period March, 2003 to March, 2009. This study found overall mutual fund industry, different sectors of the mutual funds and funds within Private Joint Venture Indian Dominated highly competitive; funds within Private Joint Venture Foreign Dominated were found most of the times moderately competitive and funds within Bank-Institution, Private Sector Indian and Private Sector Foreign were found concentrated. A lack of trend of competition was observed in the overall industry and within Private Joint Venture Foreign Dominated in India. A decreasing trend of competition was observed among different sectors and within Private Sector Indian; and an increasing trend was found within Bank-Institution, Private Sector Foreign and Private Joint Venture Indian Dominated during the period.

**Key words:** Mutual fund, competition, concentration, fund, monopoly, trend analysis, estimation

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### INTRODUCTION

With the participation of a large number of mutual funds in the mutual fund industry in India, it is natural to believe that the competition has intensified in the industry. Initially there was a state monopoly of single public sector mutual fund UTI (Unit Trust of India) during 1964-87. Later on a few mutual funds, only from the public sector, entered in the market during the period 1987-1993, which allowed some competition only among the public sector mutual funds. After 1993, the private sector (including both Indian as well as foreign) was allowed to operate in the mutual fund market in the country. Also, 1993 was the year in which the first Mutual Fund Regulations came into being. Now the job of regulating the mutual fund industry became the responsibility of Securities and Exchange Board of India (SEBI).

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By these regulations all mutual funds, except UTI, were brought under of control of SEBI. The UTI was still out of the purview of Securities and Exchange Board of India (SEBI) till 2003. In February 2003, following the annulment of the Unit Trust of India Act 1963, UTI was bifurcated into two separate entities. One of these was the Specified Undertaking of the Unit Trust of India which functions under an administrator and under the rules framed by Government of India and does not come under the purview of the Mutual Fund Regulations. The second was the UTI Mutual Fund Ltd., sponsored by State Bank of India, Punjab National Bank, Bank of Baroda and Life Insurance Corporation, which is registered with SEBI and functions under the Mutual Fund Regulations (Baijal, 2002; Balakrishnan, 2003; Sadhak, 2007).

After February 2003, a new phase started in the mutual fund industry in India. Now, all the players in the industry were functioning under same regulation formed by SEBI. In this period the SEBI regulations were modified many times as per needs of the time. The period witnessed a new strength, maturity, stability and confidence in the mutual fund industry. The period also witnessed improved level of control and supervision by the regulatory authority despite of the occurrences of a number of scams during the period. The presence of private sector (Indian as well as foreign) mutual funds having good experience and managerial skill has also led to the introduction of various innovative and attractive new schemes. Mutual funds presently offer a variety of options to investors such as income funds, balanced funds, liquid funds, gilt funds, index funds, exchange traded funds and sectoral funds etc. (Reserve Bank of India, 2005-2006). This diversification of funds and schemes may naturally be attributed to the increasing competition among the players. It has been observed that after the introduction of private sector, resources mobilized by the mutual funds has increased manifold especially in the private sector (Vidya-Shankar, 1990). These observations clearly indicate that the structure of mutual fund industry in India has changed to the large extent after commencement of the financial sector reforms. At this stage, it looks necessary to measure the levels and observe the trends of competition present in the mutual funds industry in India in the reformed regime. This background motivated us to carry out the present study. The study will endeavor to analyze the data of the post UTI split period, the period from March, 2003 to March, 2009.

In general, competition is the rivalry of two or more parties over something. Competition in the financial system may be characterized as the extent to which the financial market is contestable and the extent to which consumers can choose a wide range of financial services. It is generally recognized that strong competition is the instrument of market mechanism that increase efficiency, lowers costs of clients and improves the quality of services. Efficiency refers to the ability of the financial sector to provide high-quality products and services at the lowest cost. Competition and efficiency of the financial system are related to a large extent because more competitive system invariably turns out to be more efficient. Ownership structure of financial system can be indicative of competition. System dominated by state-owned financial bodies is found less competitive than where privately owned bodies dominate. Share of foreign- and domestic-owned bodies may also indicate presence of competition. Under competition, fund advisors of mutual funds cannot set fees above the competitive level without driving themselves out of business. Measure of concentration has often been used as indicators of competition. Concentration is defined as the degree to which the financial sector is controlled by the biggest institutions in the market (as defined by the market share) (World Bank and IMF, 2005). There exist numerous measures of competition, including the total number of financial institutions, changes in market share, ease of entry in the industry, price of services, etc. Studying concentration and competition

in the mutual fund industry is of great importance for several reasons. Similar to other industries, the degree of competition is important for the quality, variety and costs of products. In other words, the lack of competition can create inefficiencies in fund diversity, performance and fees. For instance, empirical studies made about the performances of funds have found them being too poor for the level of fees charged (Gruber, 1996; Korkeamaki and Smythe, 2004).

There are many studies available for the study of growth and performance of mutual funds in India (Sahadevan and Thiripalraju, 2006; Panwar and Madhumathi, 2005; Sen, 2006; Fernandes, 2003). However, there is lack of literature pertaining to the study related to the competition in the mutual fund industry in the Indian context. Sumalatha (2008) has made an attempt to investigate the nature of competition in the Indian mutual fund industry for the period 2003-2006. The study observed that the concentration has declined in the industry and competition has increased among the mutual funds during the period. However, the study did not perform the statistical tests to substantiate the claims made about the trends. In general, concentration ratios, Herfindahl-Hirschman index and its normalized form are widely used for characterizing the competitiveness in the industrial structures. Utton (1970) and Baumol *et al.* (1990) have illustrated various aspects of competition among the mutual funds. It gives a detailed discussion for treating mutual funds as an industry by explaining the features of an industry. On the basis of the number of firms (funds) existing, types of products (Schemes) and conditions to entry, the authors have justified the behavior of mutual funds as an industry. In this study, the levels of competition among mutual funds have been evaluated for the whole mutual fund industry, between different sectors and also within different sectors in the industry. As discussed earlier, to measure competition among the mutual funds, each fund has been considered as a firm in the mutual fund industry. To estimate the degree of competition in the mutual fund industry, this study has used a generally accepted measure of concentration-Normalized Herfindahl Hirschman index (NHHI). The NHHI provides an index which measures the level of concentration in the industry and its inverse nature provides the level of competition. In other words, NHHI increases when the competition decreases. The level of concentration/competition among the mutual funds has been measured on the basis of Asset under Management (AUM). The data have been collected from the monthly updates published by the Association of Mutual Funds in India (AMFI) (<http://www.amfiindia.com/> Accessed 27-9-2009). A trend analysis has been performed to investigate the nature of trend in the competition during this period. Spearman's Rank Correlation Test has been used to ascertain the presence (increasing or decreasing) or absence of any trend of competition in the period. The time series data have been compiled on half-yearly basis to have their size sufficiently large suitable for the analysis. Again for making comparisons between sectors the whole mutual fund industry has been divided in five groups namely, Bank-Institution, Private Sector Indian, Private sector Foreign, Private Joint Venture Indian Dominated and Private Joint Venture Foreign dominated. The Bank-Institution has been framed by combining Bank sponsored and institutional mutual funds mostly in public sector or joint ventures with public sector.

## **MATERIALS AND METHODS**

### **Herfindahl-Hirschman Index**

The Herfindahl-Hirschman index is a good indicator of level of concentration/competition among firms in the industry. It is defined as the sum of the squares of the market shares of each individual firm in the market. It may be viewed as the

average market share, weighted by market share. A decrease in the Herfindahl-Hirschman index indicates decrease in the concentration of assets and an increase in competition, whereas an increase implies the opposite. The formula of HHI can be expressed as follows:

$$HHI = \sum_{i=1}^n s_i^2 \quad (1)$$

where  $s_i$  is the market share of firm  $i$  in the market and  $n$  is the number of firms in the market. The Herfindahl-Hirschman index (HHI) ranges from  $1/n$  to one, where  $n$  is the number of firms in the market. Equivalently, the index can range up to 10,000, if percents as whole numbers are used for the proportions of assets.

A small HHI index indicates a competitive industry with no dominant players. If all firms have an equal share, the reciprocal of the index shows the number of firms in the industry. When firms have unequal shares, the reciprocal of the index indicates the equivalent number of firms in the industry. The HHI takes into account the relative size and distribution of the firms in a market and approaches zero when a market consists of a large number of firms of relatively equal size. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases.

#### **Normalized Herfindahl-Hirschman Index**

The normalized Herfindahl-Hirschman index normalizes the HHI as shown below in Eq. 2. While the Herfindahl index ranges from  $1/n$  to one, the normalized Herfindahl index ranges from 0 to 1 whatever be the number of firms in the market. The normalized HHI takes into account the relative size of the firms in a market and approaches zero when a market consists of firms of relatively equal size. This index is not affected by the number of firms competing in the market. Since, the HHI depends on the number of funds in the market therefore this index will not be suitable for the comparison of different sectors/markets having unequal number of firms. Normalized HHI is computed with the following formula:

$$\text{Normalised HHI} = \frac{HHI - 1/n}{1 - 1/n} \quad (2)$$

where,  $n$  is the number of funds in the market and HHI is the usual Herfindahl Index.

In this study we have used only normalized Herfindahl-Hirschman index for measuring the levels of competition and assessing the trends. Here, we have used mutual funds in place of firms to obtain Normalized Herfindahl index (NHHI) to estimate the level of competition in the Indian mutual fund industry. The normalized Herfindahl-Hirschman index, behaves in similar way as Herfindahl-Hirschman index except being normalized for the number of firms in the range 0 to 1. As per US Department of Justice and the Federal Trade Commission notification HHI index below 0.1 indicates an unconcentrated market. The HHI index between 0.1 to 0.18, indicates moderate concentration and above 0.18 indicates high concentration (Horizontal Merger Guidelines, US Department of Justice and the Federal Trade Commission, April 8, 1997). We have used this classification to categorize the mutual funds industry and its different sectors in India. Table 1 depicts the proportions of the assets of each mutual fund active in the Indian market to the total assets. Table 2 shows the

Table 1: Asset shares and ranks of the mutual funds in India

Mutual funds	Mar-09		Sep-08		Mar-08		Sep-07		Mar-07		Sep-06		Mar-06		Sep-05		Mar-05		Sep-04		Mar-04		Sep-03		Mar-03		
	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	
<b>Bank-institution</b>																											
BOB Asset Management Co. Ltd.	0.2	26	0.0	34	0.0	32	0.0	31	0.0	29	0.1	27	0.1	27	0.1	27	0.1	27	0.3	24	0.3	26	0.3	24	0.2	27	
Canbank Investment Management Services Ltd.	1.0	21	1.1	22	0.3	27	0.5	26	0.7	23	0.9	23	1.0	21	0.9	23	1.1	18	1.1	19	1.0	22	1.3	20	1.2	19	
GIC Asset Management Co. Ltd.														0.1	28	0.1	29	0.1	26	0.1	28	0.2	26	0.3	26		
IDBI Principal Asset Management Co. Ltd.																								2.1	15		
IL and FS Asset Management Co. Ltd.																				1.3	18	1.7	17	1.3	17		
LIC Mutual Fund Asset Management Co. Ltd.	4.7	7	3.1	11	2.7	12	2.6	14	3.0	13	3.5	13	2.3	14	2.0	15	1.9	15	2.8	14	2.6	15	3.2	12	3.7	9	
PNB Asset Management Co. Ltd.																				0.1	31	0.1	28	0.2	28		
SBI Funds Management Pvt. Ltd.	5.3	6	5.5	6	5.5	6	5.0	7	5.1	7	5.2	6	5.7	7	5.3	7	4.4	9	3.9	11	3.2	11	3.7	8	4.1	7	
UTI Asset Management Co. Pvt. Ltd.	9.9	4	8.4	4	9.3	3	9.4	3	10.9	3	11.9	1	12.7	1	12.4	1	13.9	1	13.2	1	12.6	1	13.5	1	17.0	1	
<b>Private sector Indian</b>																											
Edelweiss Mutual Fund	0.0	35	0.1	31																							
Benchmark Asset Management Co. Pvt. Ltd.	0.2	27	0.7	23	0.6	22	1.3	21	1.2	19	1.3	20	0.4	24	1.6	17	0.3	24	0.1	28	0.0	32	0.0	31	0.0	32	
Credit Capital Asset Management Co. Ltd.													0.1	26	0.1	26	0.1	26	0.1	27	0.1	30	0.1	29	0.1	31	
DBS Cholamandalam Asset Management Ltd.	0.2	28	0.3	28	0.4	25	0.8	23	0.6	24	0.7	24	0.9	22	0.8	24	0.7	22	0.9	22	0.7	25	1.0	21	1.1	20	
Deutsche Asset Management (India) Pvt. Ltd.	1.9	14	2.2	15	2.4	15	2.2	15	1.8	16	1.9	16	1.1	20	1.8	16	1.2	17	1.7	16	1.3	20	1.6	18	0.4	25	

Table 1: Continued

	Mar-09		Sep-08		Mar-08		Sep-07		Mar-07		Sep-06		Mar-06		Sep-05		Mar-05		Sep-04		Mar-04		Sep-03		Mar-03			
	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank		
Mutual funds																												
Escorts Asset Management Ltd.	0.0	31	0.0	32	0.0	31	0.0	30	0.0	28	0.0	28	0.1	28	0.1	29	0.1	28	0.1	29	0.1	29	0.1	29	0.1	30	0.1	30
First India Asset Management Pvt. Ltd.																							0.2	27	0.1	29		
J.M.Financial Asset Management Pvt. Ltd.	1.0	20	2.0	16	2.5	14	1.2	22	1.0	20	1.5	19	1.1	19	2.2	14	2.7	14	2.3	15	2.2	16	3.3	10	3.3	11		
Kotak Mahindra Asset Management Co. Ltd.	3.7	9	3.6	9	3.4	9	4.0	8	3.6	10	3.8	11	4.3	9	4.0	10	4.3	10	3.5	12	3.2	10	3.2	11	3.8	8		
Lotus India Asset Management Co. Pvt. Ltd.	1.2	18	1.5	19	1.5	20	1.3	20	0.4	25																		
Quantum Asset Management Co. Pvt. Ltd.	0.0	34	0.0	35	0.0	33	0.0	32	0.0	30																		
Reliance Capital Asset Management Ltd.	16.4	1	16.3	1	17.2	1	14.8	1	14.2	1	9.8	3	10.6	2	7.2	5	6.4	6	6.5	5	4.4	9	5.5	7	3.0	12		
Sahara Asset Management Co. Pvt. Ltd.	0.0	33	0.0	33	0.0	30	0.0	29	0.1	27	0.1	26	0.1	25	0.2	25	0.2	25	0.2	25	0.2	27						
Standard Chartered Asset Management Co. Pvt. Ltd.	2.9	12	2.2	14	2.4	16	2.7	13	3.5	11	4.0	9	4.1	11	4.8	8	4.6	7	6.1	6	4.5	7	6.1	6	5.2	6		
Tata Asset Management Ltd.	3.5	10	3.9	8	3.7	8	3.6	9	3.9	8	4.3	8	4.2	10	4.8	9	4.5	8	3.9	9	3.1	13	2.2	13	1.3	18		
Taurus Asset Management Co. Ltd.	0.0	29	0.1	30	0.1	29	0.1	28	0.1	26	0.1	25																
<b>Private sector foreign</b>																												
ABN AMRO Asset Management (India) Ltd./Fortis	1.2	19	1.7	18	1.2	21	1.5	19	1.5	18	1.6	18	1.2	18	1.3	20	0.6	23	1.0	20								
AIG Global Asset Management Co. (India) Private Ltd.	0.3	24	0.6	24	0.6	24	0.5	25																				

Table 1: Continued

	Mar-09		Sep-08		Mar-08		Sep-07		Mar-07		Sep-06		Mar-06		Sep-05		Mar-05		Sep-04		Mar-04		Sep-03		Mar-03			
	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank		
<b>Mutual funds</b>																												
Fidelity fund Management Private Ltd.	1.3	17	1.5	20	1.6	19	2.1	16	1.8	17	1.8	17	1.6	15	1.3	21												
Franklin Templeton Asset Management (India) Pvt. Ltd.	3.9	8	5.4	7	5.1	7	6.4	5	6.7	5	7.9	5	7.7	5	8.6	4	10.3	2	12.1	2	9.3	2	11.0	3	11.1	3		
Mirae Asset Mutual Fund	0.0	32	0.4	27	0.2	28																						
Principal Asset Management Co. Pvt. Ltd.																				2.2	17	2.1	14					
<b>Private joint venture foreign dominated</b>																												
Alliance Capital Asset Management (India) Pvt. Ltd.																0.8	20	1.3	17	1.3	19	1.8	16	2.9	13			
Bharti AXA Mutual Fund	0.0	30	0.1	29																								
HSBC Asset Management (India) Private Ltd.	1.9	13	2.9	12	2.8	11	3.5	10	3.4	12	3.3	14	4.0	12	3.7	11	4.2	11	3.9	10	2.8	14	2.0	15	0.9	21		
ING Investment Management (India) Pvt. Ltd.	0.5	22	1.2	21	1.7	18	1.7	18	0.9	22	1.3	21	0.8	23	1.4	18	0.8	21	0.9	21	1.0	23	0.7	23	0.7	23		
JPMorgan Asset Management (India) Private Ltd.	0.5	23	0.5	26	0.4	26	0.4	27																				
Morgan Stanley Investment Management Pvt. Ltd.	0.3	25	0.5	25	0.6	23	0.8	24	0.9	21	1.0	22	1.2	17	1.0	22	1.0	19	0.8	23	0.8	24	0.9	22	0.9	22		
Principal PNB Asset Management Co. Pvt. Ltd.	1.4	16	1.9	17	2.5	13	3.1	12	2.8	14	3.6	12	2.8	13	3.7	12	3.7	12	2.8	13	8.6	5						
Sun Fund C Asset Management (India) Pvt.Ltd.																				4.5	8	0.2	25	0.7	24			
<b>Private joint venture indian dominated</b>																												
Birla Sun Life Asset Management Co. Ltd.	9.5	5	7.1	5	6.8	5	5.8	6	5.8	6	5.0	7	6.5	6	6.0	6	6.9	5	5.9	7	5.4	6	6.8	5	6.9	5		



Table 1: Continued

	Mar-09		Sep-08		Mar-08		Sep-07		Mar-07		Sep-06		Mar-06		Sep-05		Mar-05		Sep-04		Mar-04		Sep-03		Mar-03			
	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank		
Mutual funds																												
DSP Merrill Lynch Fund Managers Ltd.	2.9	11	3.5	10	3.2	10	3.2	11	3.7	9	3.9	10	4.7	8	3.1	13	3.7	13	3.9	8	3.1	12	3.4	9	2.9	14		
HDFC Asset Management Co. Ltd.	11.7	2	9.8	2	8.5	4	8.7	4	8.7	4	8.8	4	9.3	4	9.4	3	10.0	4	9.8	3	9.2	4	10.8	4	8.2	4		
ICICI Prudential Asset Management Co. Ltd.	10.4	3	9.4	3	10.3	2	10.6	2	11.6	2	10.4	2	10.1	3	10.6	2	10.2	3	9.7	4	9.3	3	11.3	2	11.4	2		
Sundaram BNP Paribas Asset Management Co. Ltd.	1.9	15	2.4	13	2.4	17	2.1	17	2.3	15	2.2	15	1.4	16	1.4	19	1.2	16	1.1	18	1.2	21	1.6	19	1.5	16		
Dundee Investment Management and Research (Pvt.) Ltd.																										0.0	33	
Zurich Asset Management Co. (India) Pvt. Ltd.																										3.4	10	

Source: Authors own calculation. DATA: AMFI web site <http://www.amfiindia.com/>

Table 2: Asset shares and ranks of the mutual funds in specified categories

	Mar-09		Sep-08		Mar-08		Sep-07		Mar-07		Sep-06		Mar-06		Sep-05		Mar-05		Sep-04		Mar-04		Sep-03		Mar-03			
	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank		
<b>Mutual funds</b>																												
<b>Between sectors</b>																												
Bank-Institution	21.1	3	18.2	3	17.8	3	17.5	3	19.7	3	21.6	3	21.7	3	20.8	3	21.5	3	21.4	3	21.2	2	24.0	2	30.1	2		
Private Sector Indian	31.1	2	33.0	1	34.4	1	32.1	1	30.3	2	27.6	2	27.0	2	27.6	2	25.1	2	25.4	2	19.9	3	23.2	3	18.5	3		
Private Sector Foreign	6.6	4	9.5	4	8.7	4	10.5	4	10.0	4	11.4	4	10.5	4	11.2	4	10.9	4	13.1	4	11.5	5	13.1	4	11.1	4		
Private Joint Venture Foreign Dominated	4.6	5	7.1	5	8.0	5	9.5	5	8.0	5	9.1	5	8.9	5	9.8	5	10.5	5	9.7	5	18.9	4	5.7	5	6.1	5		
Private Joint Venture Indian Dominated	36.5	1	32.2	2	31.1	2	30.4	2	32.1	1	30.3	1	32.0	1	30.5	1	32.0	1	30.4	1	28.3	1	33.9	1	34.2	1		
<b>Within bank-institution</b>																												
BOB Asset Management Co. Ltd.	1.1	5	0.1	5	0.1	5	0.1	5	0.1	5	0.3	5	0.4	5	0.5	5	0.5	5	1.2	5	1.3	6	1.1	6	0.7	8		

Table 2: Continued

	Mar-09		Sep-08		Mar-08		Sep-07		Mar-07		Sep-06		Mar-06		Sep-05		Mar-05		Sep-04		Mar-04		Sep-03		Mar-03		
	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	
Mutual funds																											
Canbank Investment Management Services Ltd.	4.6	4	6.2	4	1.8	4	2.6	4	3.4	4	4.2	4	4.4	4	4.5	4	5.1	4	5.0	4	4.9	5	5.5	5	4.0	6	
GIC Asset Management Co. Ltd.															0.3	6	0.4	6	0.7	6	0.7	7	0.9	7	1.1	7	
IDBI Principal Asset Management Co. Ltd.																									7.0	4	
IL and FS Asset Management Co. Ltd.																				6.1	4	7.2	4	4.4	5		
LIC Mutual Fund Asset Management Co. Ltd.	22.2	3	16.8	3	15.0	3	15.0	3	15.0	3	16.3	3	10.4	3	9.8	3	9.0	3	13.2	3	12.2	3	13.2	3	12.3	3	
PNB Asset Management Co. Ltd.																					0.3	8	0.5	8	0.6	9	
SBI Funds Management Pvt. Ltd.	25.3	2	30.4	2	31.1	2	28.4	2	26.2	2	24.0	2	26.2	2	25.5	2	20.5	2	18.1	2	15.0	2	15.3	2	13.4	2	
UTI Asset Management Co. Pvt. Ltd.	46.8	1	46.4	1	52.1	1	53.9	1	55.3	1	55.2	1	58.6	1	59.5	1	64.6	1	61.8	1	59.5	1	56.3	1	56.5	1	
<b>Within private sector Indian</b>																											
Edelweiss Mutual Fund Benchmark Asset Management Co. Pvt. Ltd.	0.0	14	0.2	11																							
Credit Capital Asset Management Co. Ltd.	0.7	8	2.2	8	1.8	8	4.1	7	3.9	6	4.8	7	1.6	8	5.9	7	1.3	8	0.3	10	0.2	11	0.1	11	0.1	11	
DBS Cholamandalam Asset Management Ltd.													0.4	10	0.4	10	0.4	10	0.4	9	0.4	10	0.4	9	0.5	10	
Deutsche Asset Management (India) Pvt. Ltd.	0.7	9	0.9	9	1.3	9	2.5	9	2.0	8	2.7	8	3.2	7	3.1	8	2.7	7	3.4	7	3.5	7	4.1	7	5.8	6	
Escorts Asset Management Ltd.	6.1	5	6.7	5	7.1	5	6.8	5	6.0	5	6.8	5	4.1	6	6.5	6	4.8	6	6.7	6	6.4	6	6.8	6	2.1	7	
First India Asset Management Pvt. Ltd.	0.1	11	0.1	12	0.1	12	0.1	12	0.1	12	0.1	11	0.3	11	0.2	11	0.3	11	0.3	11	0.5	9	0.4	10	0.6	9	
J.M.Financial Asset Management Pvt. Ltd.																							0.8	8	0.7	8	
Kotak Mahindra Asset Management Co. Ltd.	3.1	7	6.0	6	7.1	4	3.9	8	3.2	7	5.3	6	4.2	5	7.9	5	10.8	5	9.2	5	11.2	5	14.2	3	18.1	3	
	11.9	2	10.8	3	10.0	3	12.3	2	11.7	3	13.6	4	15.9	2	14.4	4	17.2	4	13.8	4	16.3	3	13.8	4	20.3	2	

Table 2: Continued

	Mar-09		Sep-08		Mar-08		Sep-07		Mar-07		Sep-06		Mar-06		Sep-05		Mar-05		Sep-04		Mar-04		Sep-03		Mar-03		
	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	
Mutual funds																											
Lotus India Asset Management Co. Pvt. Ltd.	3.9	6	4.5	7	4.4	7	4.2	6	1.2	9																	
Quantum Asset Management Co. Pvt. Ltd.	0.0	13	0.0	14	0.0	13	0.0	13	0.1	13	0.0	12	0.0	12													
Reliance Capital Asset Management Ltd.	52.8	1	49.5	1	50.1	1	46.0	1	46.9	1	35.7	1	39.4	1	25.9	1	25.4	1	25.5	1	22.3	2	23.5	2	16.5	4	
Sahara Asset Management Co. Pvt. Ltd.	0.1	12	0.1	13	0.1	11	0.1	11	0.2	11	0.3	10	0.5	9	0.8	9	0.6	9	0.9	8	1.1	8					
Standard Chartered Asset Management Co. Pvt. Ltd.	9.4	4	6.8	4	7.0	6	8.5	4	11.7	4	14.6	3	15.0	4	17.4	2	18.3	2	24.1	2	22.4	1	26.4	1	28.3	1	
Tata Asset Management Ltd.	11.1	3	11.9	2	10.8	2	11.3	3	12.8	2	15.6	2	15.5	3	17.4	3	18.1	3	15.4	3	15.8	4	9.4	5	7.0	5	
Taurus Asset Management Co. Ltd.	0.1	10	0.2	10	0.2	10	0.2	10	0.3	10	0.4	9															
<b>Within private sector foreign</b>																											
ABN AMRO Asset Management (India) Ltd./Fortis	17.8	3	17.8	2	14.0	3	13.9	3	14.7	3	14.0	3	11.4	3	11.7	2	5.7	2	7.7	2							
AIG Global Asset Management Company (India) Private Ltd.	4.2	4	6.0	4	6.8	4	4.6	4																			
Fidelity Fund Management Private Ltd.	18.9	2	15.3	3	18.2	2	20.4	2	17.9	2	16.3	2	15.1	2	11.2	3											
Franklin Templeton Asset Management (India) Pvt. Ltd.	58.7	1	56.3	1	58.6	1	61.0	1	67.4	1	69.8	1	73.5	1	77.1	1	94.3	1	92.3	1	80.7	1	83.7	1	100.0	1	
Mirae Asset Mutual Fund	0.5	5	4.6	5	2.4	5																					
Principal Asset Management Co. Pvt. Ltd.																					19.3	2	16.3	2			
<b>Within private joint venture foreign dominated</b>																											
Alliance Capital Asset Management (India) Pvt. Ltd.																	7.7	4	13.1	3	6.8	4	32.1	2	47.1	1	

Table 2: Continued

	Mar-09		Sep-08		Mar-08		Sep-07		Mar-07		Sep-06		Mar-06		Sep-05		Mar-05		Sep-04		Mar-04		Sep-03		Mar-03		
	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	Share (%)	Rank	
Mutual funds																											
Bharti AXA Mutual Fund	0.9	6	1.3	8																							
HSBC Asset Management (India) Private Ltd.	41.9	1	41.4	1	35.2	1	37.2	1	42.5	1	35.7	2	44.8	1	37.7	1	39.8	1	40.1	1	14.7	3	35.8	1	15.5	2	
ING Investment Management (India) Pvt. Ltd.	11.1	3	16.8	3	20.9	3	17.6	3	10.7	4	14.0	3	9.5	4	14.5	3	7.6	5	9.0	4	5.0	5	12.7	4	12.2	4	
JPMorgan Asset Management (India) Private Ltd.	10.7	4	6.4	5	5.1	5	4.1	5																			
Morgan Stanley Investment Management Pvt. Ltd.	5.9	5	7.6	4	7.6	4	8.1	4	11.0	3	10.6	4	14.1	3	10.5	4	9.8	3	8.6	5	4.4	6	15.6	3	14.5	3	
Principal PNB Asset Management Co. Pvt. Ltd.	29.6	2	26.5	2	31.2	2	33.0	2	35.8	2	39.6	1	31.6	2	37.3	2	35.1	2	29.2	2	45.5	1					
Sun F and C Asset Management (India) Pvt. Ltd.																					23.6	2	3.9	5	10.7	5	
<b>Within private joint venture Indian dominated</b>																											
Birla Sun Life Asset Management Co. Ltd.	26.1	3	22.0	3	21.9	3	19.3	3	18.2	3	16.6	3	20.3	3	19.7	3	21.6	3	19.3	3	19.2	3	20.1	3	20.2	3	
DSP Merrill Lynch Fund Managers Ltd.	8.0	4	10.9	4	10.2	4	10.4	4	11.5	4	13.0	4	14.6	4	10.3	4	11.5	4	12.9	4	11.1	4	10.1	4	8.4	5	
HDFC Asset Management Co. Ltd.	32.2	1	30.5	1	27.3	2	28.5	2	27.1	2	29.1	2	29.1	2	30.6	2	31.3	2	32.3	1	32.5	2	31.9	2	23.9	2	
ICICI Prudential Asset Management Co. Ltd.	28.5	2	29.2	2	33.1	1	34.8	1	36.1	1	34.2	1	31.7	1	34.9	1	31.7	1	31.8	2	32.9	1	33.2	1	33.4	1	
Sundaram BNP Paribas Asset Management Co. Ltd.	5.1	5	7.4	5	7.6	5	7.0	5	7.1	5	7.1	5	4.4	5	4.5	5	3.9	5	3.8	5	4.4	5	4.6	5	4.3	6	
Dundee Investment Management and Research (Pvt.) Ltd.																										0.0	7
Zurich Asset Management Co. (India) Pvt. Ltd.																										9.9	4

Source: Authors own calculation. DATA: AMFI web site <http://www.amfiindia.com/>

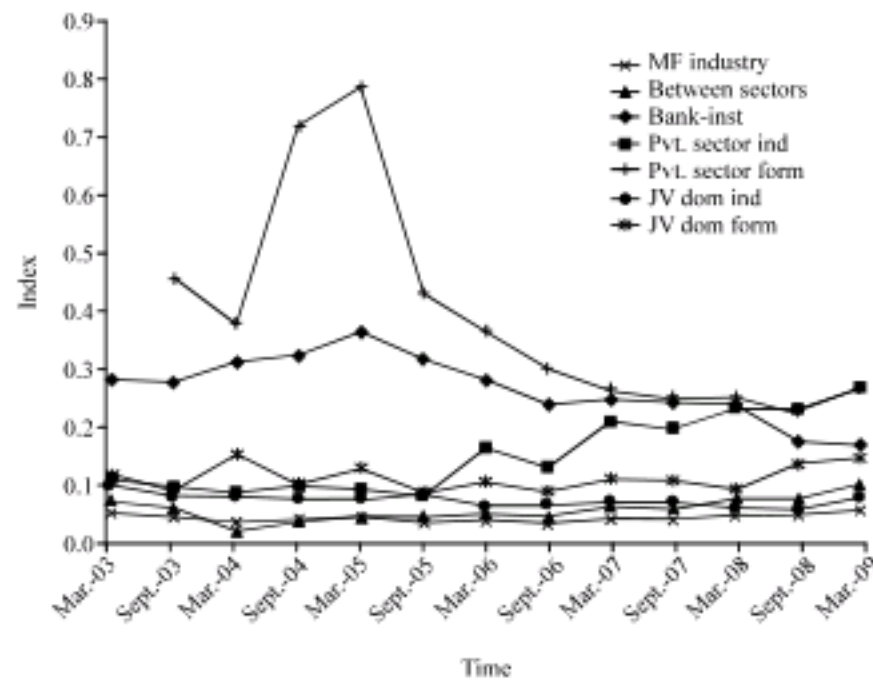


Fig. 1: Normalized HHI in specified categories of mutual funds

Table 3: Normalized HHI in specified categories of mutual funds

Time period	MF industry	Between sectors	Bank-institution	Private sector indian	Private sector foreign	Private joint venture Indian dominated	Private joint venture foreign dominated
Mar-03	0.0504	0.0724	0.2806	0.1092		0.0989	0.1169
Sep-03	0.0439	0.0589	0.2763	0.0974	0.4547	0.0814	0.0906
Mar-04	0.0355	0.0179	0.3122	0.0861	0.3769	0.0807	0.1522
Sep-04	0.0399	0.0367	0.3224	0.0986	0.7172	0.0757	0.0983
Mar-05	0.0443	0.0433	0.3640	0.0925	0.7860	0.0750	0.1287
Sep-05	0.0335	0.0439	0.3163	0.0799	0.4306	0.0837	0.0844
Mar-06	0.0382	0.0512	0.2814	0.1625	0.3638	0.0614	0.1061
Sep-06	0.0328	0.0448	0.2384	0.1294	0.2990	0.0639	0.0876
Mar-07	0.0417	0.0621	0.2471	0.2094	0.2623	0.0690	0.1099
Sep-07	0.0395	0.0577	0.2424	0.1946	0.2479	0.0690	0.1083
Mar-08	0.0465	0.0759	0.2388	0.2307	0.2511	0.0596	0.0917
Sep-08	0.0453	0.0749	0.1754	0.2313	0.2226	0.0552	0.1363
Mar-09	0.0563	0.1015	0.1687	0.2676	0.2665	0.0779	0.1482

Source: Authors own calculation. DATA: AMFI web site <http://www.amfiindia.com/>

normalized HHIs estimating the levels of concentration for different categories of the mutual funds in India. Figure 1 shows the graphical view of these indices over the period under study.

### Trend Analysis

The time series of indices are presented in the Table 3 for different groupings of the mutual funds active in the Indian market. While the levels of the competition were clearly expressed during the period in the different groupings, the nature of the trend was not found well exposed always through the tables and the graphs. A little inclination in the graph can not conclusively indicate a presence of the trend. In order to get a clear insight of the trend of competition in the various sectors/groupings of the mutual fund industry, a non-parametric test called Spearman Rank Correlation Test has been performed. These tests have been applied using time series of normalized HHIs.

### **Spearman Rank Correlation Test**

The Spearman Rank Correlation Test is a non-parametric test. Non-parametric (or distribution-free) inferential statistical methods are mathematical procedures for statistical hypothesis testing which, unlike parametric statistics, make no assumptions about the probability distributions of the variables being assessed. Here, the data relates to the normalized HHIs and the distributive nature of the data is not known. Therefore, it is pertinent to use a Non-parametric test for the purpose.

The Spearman Rank Correlation Test is based on Spearman's rank correlation coefficient (Kendall and Kendall, 1987). In statistics, Spearman's rank correlation coefficient is named after Charles Spearman and is often denoted by the Greek letter  $\rho$  (rho). It is a non-parametric measure of correlation. It assesses the relationship between two variables, without making any assumptions about the probability distribution of the variables. Unlike the Pearson product-moment correlation coefficient, Spearman's rank correlation coefficient does not require the assumption that the relationship between the variables is linear, nor does it require the variables to be measured on interval scales; it can be used for variables measured at the ordinal level. In principle, it is simply a special case of the Pearson product-moment coefficient in which the data are converted to rankings before calculating the coefficient. In practice, however, a simpler procedure is normally used to calculate  $\rho$ . The raw scores are converted to ranks and the differences  $d$  between the ranks of each observation on the two variables are calculated.

If there are no tied ranks, then  $\rho$  is given by:

$$\rho = 1 - \frac{6 \sum_{i=1}^n d_i^2}{n(n^2 - 1)} \quad (3)$$

Where:

$d_i$ : The difference between the ranks corresponding  $i$ th pair of values of the two variables

$n$ : The number of pairs of values

If tied ranks exist, classic Pearson's correlation coefficient between ranks has to be used instead of this formula. At this point, one needs to assign the same rank to each of the equal values. It is an average of their positions in the ascending order of the values. For the measurement of rank correlation in a time series data, time itself is taken one of the variables and the variable under consideration stands for other variable.

### **Trend Test**

For testing a trend in any time series, using Spearman Rank Correlation Test, null hypothesis is taken as the absence of any trend (Keith and McLead, 1993). The test becomes two-tail test if the alternative hypothesis specifies direction free presence of the trend and it will be one - tail test if the alternative hypothesis specifies the directional presence of the trend like increasing or decreasing trend. Here one of the variables is taken as time and the time series of NHHIs is taken as other variable. In the present study, the null and alternative hypotheses for various groupings of the Mutual Funds are defined as follows: Since we were concerned only with increasing or decreasing trend therefore we are only considering one-tail test.

**Null Hypothesis**

$H_0: \rho = 0$  i.e., there is no trend in the normalized HHIs during March, 2003 to November, 2007. In other words, there is no change in the level of competition or concentration during the period.

**Alternative Hypothesis**

Two different alternative hypotheses  $H_{11}$  and  $H_{12}$  for one-tail test are described below:

- $H_{11}: \rho < 0$  i.e., there is a decreasing trend in the normalized HHIs during March 2003 to November 2007. In other words, there is an increasing trend in the level of competition (decreasing trend in the level of concentration) during the period.
- $H_{12}: \rho > 0$  i.e., there is an increasing trend in the normalized HHIs during March 2003 to November 2007. In other words, there is decreasing trend in the level of competition (increasing trend in the level of concentration) during the period

We will use alternative hypothesis  $H_{11}$  when we find the calculated value of  $\rho$  is negative and  $H_{12}$  when the calculated value of  $\rho$  is found positive. The calculated value of the Spearman's rank correlation coefficient,  $\rho$  is compared with tabulated critical value for specified level of significance. If calculated absolute value of  $\rho$  is equal to or greater than tabulated  $\rho$  then the null hypothesis will be rejected. In other words alternative hypothesis will be accepted in this case. If calculated absolute value of  $\rho$  is less than tabulated  $\rho$  then the null hypothesis accepted (in other words reject the alternative hypothesis).

The ranks and calculated values of Spearman's rank correlation coefficient  $\rho$  between time and normalized HHIs are presented in the Table 4 for different groupings of the mutual funds in the Indian market. Table 5 provides critical values of Spearman's rank correlation coefficient  $\rho$  for various sizes of time series and for 1 and 5% level of significance from Kozak *et al.* (2008).

Table 4: Ranks of indices, Spearman's rank correlation coefficient and critical values

Ranks of normalized HHI indices in specified categories of mutual funds							
Time (Ranks)	MF industry	Between sectors	Bank-institution	Private sector Indian	Private sector foreign	Private joint venture indian dominated	Private joint venture foreign dominated
13	2	4	6	8		1	5
12	6	6	7	10	3	3	11
11	11	13	4	12	5	4	1
10	8	12	2	9	2	6	9
9	5	11	1	11	1	7	4
8	12	10	3	13	4	2	13
7	10	8	5	6	6	11	8
6	13	9	11	7	7	10	12
5	7	5	8	4	9	8	6
4	9	7	9	5	11	9	7
3	3	2	10	3	10	12	10
2	4	3	12	2	12	13	3
1	1	1	13	1	8	5	2
$\rho$ (calculated)	0.2198	0.5769*	-0.7363**	0.8242**	-0.8392**	-0.6868**	0.1374

$\rho$  (tabulated) at 5% level of significance = 0.475 (one-tail test),  $n = 13$ .  $\rho$  (tabulated) at 1% level of significance = 0.673 (one-tail test),  $n = 13$ . \*Significant, \*\*highly significant

Table 5: Table of critical values of Spearman's rank correlation coefficient for one-tail test

n (the number of pairs of scores)	Level of significance (alpha)	
	0.050	0.010
5	0.900	
6	0.829	0.943
7	0.714	0.893
8	0.643	0.833
9	0.600	0.783
10	0.564	0.745
11	0.523	0.736
12	0.497	0.703
13	0.475	0.673
14	0.457	0.646
15	0.441	0.623
16	0.425	0.601
17	0.412	0.582
18	0.399	0.564
19	0.388	0.549
20	0.377	0.534

Kozak *et al.* (2008)

## RESULTS AND DISCUSSION

### Levels of Competition among all Mutual Funds

Table 1 shows the proportions of the assets of each mutual fund active in the Indian market to the total assets. The table also presents the ranks of the mutual funds in the industry. It may be seen from the table that the large firms were more or less able to retain their market share in the period with slight changes in their ranks. Even though there are small changes in the market shares of the funds over the years, there is not much difference in the ranks of larger funds. When we look the time series of ranks of the top ranking mutual funds, we find that UTI Asset Management Co. Pvt. Ltd., was at the top (with 17% AUM) in March 2003 and it maintained its top (with 11.9% AUM) position till September 2006 but it has slid down to rank 3 (with 10.9% AUM) in March 2007 and further at the rank 4 (with 9.9% AUM) in March 2009. The ICICI Prudential Asset Management Co. Ltd was at the rank 2 (with 11.4% AUM) in March 2003 and it maintains its rank 3 (with 10.4% AUM) in March 2009 although it vacillated between rank 2 and 4 during the period in between. The HDFC Asset Management Co. Ltd. was at the rank 4 (with 8.2% AUM) in March 2003 and it has consistently maintained its rank till March 2008 (with 10.3% AUM) and it climbed to rank 2 (with 9.8% AUM) in September 2008 and still maintains the rank (with 11.7% AUM) in March 2009. Reliance Capital Asset Management Ltd. has made tremendous jump in the period. It was at the rank 12 (with only 3% AUM) in March 2003 but it climbed to the rank 2 (with 10.6% AUM) in March 2006 and again at the rank 1 (with 14.2% AUM) in March 2007 which it has maintained (with 16.4% AUM) till March 2009. The foreign sector mutual fund Franklin Templeton which was at the rank 3 (with 11.1% AUM) in March 2003 has gone down to the rank 8 (with 3.9% AUM) in March 2009. A private joint sector Indian dominated fund Birla Sun Life was at the rank 5 (with 6.9% AUM) in March 2003 still maintains its rank 5 in March 2009 although its rank vacillated between 5 and 7 in the period. Now we find that in March 2009, top 3 mutual funds were either from Indian Private Sector or from private joint sector Indian dominated. The public sector mutual fund UTI has come down to the rank 4. Thus we find that the Indian private sector funds have made impressive performance in the post UTI spilt period.



In the Table 3 we have presented the normalized HHI values for mutual funds industry in India under different categorization. The normalized HHI value for the whole industry was 0.0504 in March, 2003. By September, 2006, the index had fallen to 0.0328 but it again started increasing and in March 2009 the level of the index was at the level .0563. All the HHIs in the period under study for the whole industry are below .1, which clearly shows that the mutual funds in India have competed in an unconcentrated market during the period. The low level of concentration in the mutual fund industry is the evidence of the substantial degree of competition among the mutual funds. The Figure 1 shows the graphical trends of normalized HHI indices for specified categories of the mutual funds. From the graph we are unable to get any indication of presence of a trend in these indices for the whole mutual fund industry in India during the period.

#### **Levels of Competition between the Sectors**

Table 2 presents the proportions of the assets to the total assets and ranks of the different categories of mutual funds in the Indian market. It may be seen from the table that among the five sectors Private Joint Venture Indian Dominated had largest share throughout the period followed by Private Sector Indian except for a brief period from September 2007 to September 2008 when their ranks were interchanged. The top ranking Private Joint Venture Indian Dominated funds had 34.2% share in March 2003 which has increased to 36.5% in March 2009. The second ranking sector Private Sector Indian had 18.5% shares in March 2003 which has increased to 31.1% in March 2009. The effect of present global depression is visible on the proportion of shares of the Private Sector Foreign and Private Joint Venture Foreign Dominated. Their shares declined to about half in this period. While the Private Sector Foreign had 10.5% in September 2007 its share declined to 6.6% in the month March 2009 and share of Private Joint Venture Foreign Dominated declined from 9.5 to 4.6% in the same period. The Bank-Institution, comprising mostly public sector funds, were at the third rank 3 in March 2009. Its share has reduced from 30.1% in March 2003 to 21.1% in March 2009. Clearly, we find Private Joint Venture Indian Dominated and Private Sector Indian funds have increased their share in this period while the share of Bank-Institution has decreased.

The indices of normalized HHI between Sectors shown in the Table 3 were between 0.0179 and 0.1015 during the period March 2003 to March 2009. Except for March 2009 the indices were less than .1 throughout this period indicating that the sectors were functioning in unconcentrated manner during the period. The graphical view of these indices shown in the Figure 1 shows some indication of their upward movement providing indication of decreasing trend in the competition or in other words, increasing trend in the concentration level during the period.

#### **Levels of Competition within the Sectors**

The proportion of shares of the funds within Bank-Institution and their ranks are shown in the Table 2. This sector is highly concentrated. About 50% shares of AUM were held by UTI Asset Management throughout the period under study. It was always at rank 1 in the period in this sector. However, its share within Bank-Institution has reduced considerably from 56.5% in March 2003 to 46.8% in March 2009. The SBI Funds were at the second rank throughout the period but it has made remarkable improvement. Its share of AUM has increased from 13.4% in March 2003 to 25.3% in March 2009. The third ranking fund LIC Mutual Fund also increased its share from 12.3% in March 2003 to 22.2% in March 2009. It is clear that the SBI Funds was struggling to overtake UTI with a good chance. One thing requires mention is the size and share of this sector which is shrinking continuously. In

March 2003 there were 9 funds functioning in this sector which has reduced to 5 in March 2009 which indicates the funds in the sector lack necessary managerial skill and expertise. It seems that these public sector funds are unable to withstand in the increasingly competitive market of mutual funds in India.

From the Table 3, we find that except for recent period from September 2008 to March 2009 the normalized HHIs were higher than 0.18 throughout the period under study for Bank-Institution. Even in this brief period the indices were 0.1754 and 0.1887. It shows that this sector is highly concentrated and it lacks competition. From Figure 1 we can see that there is visible trend towards downward in the indices during the period indicating increasing trend in the competition.

The proportion of assets of the funds within Private Sector Indian and their ranks are shown in the Table 2. The Reliance Capital Asset Management has the top rank in this sector from September 2004 to March 2009 holding 52.8% of the assets in March 2009. It had only 16.5% share in March 2003 with rank 4. Tata Asset Management and Kotak Mahindra Asset Management were competing with each other for the second rank most of the times during the period under study. The Kotak Mahindra was at the rank 2 in March 2009 with 11.9% share which has declined from its share 20.3% in March 2003. The TATA fund was at rank 3 in March 2009 and it has made improvement in its share and position from March 2003 when it had rank 5 with 7.0% share in the assets in this sector. In this sector the concentration of the assets also seems high. The values of normalized HHIs obtained in the Table 3 shows that the indices were near about .1 at the start of the period and it has climbed to the level 0.2676 in March 2009. From March 2007 the index was never less than 0.18 and thus we may see that this sector has become highly concentrated. From Figure 1 we can see the clearly visible upward trend in the indices during the period under study. In other words, competition within Private Sector Indian was at very low level and the trend in the graph shows that competition has a decreasing trend.

We can find the proportion of shares of different funds within Private Sector Foreign and their ranks in the Table 2. The Franklin Templeton Asset Management looks at the top rank in this sector throughout the period under study. Its share was also about 60% or more during the period. The Fidelity Fund is at the rank 2 with 18.9% share of the sector in March 2009. The third ranking fund was ABN AMRO with 17.8% share. This sector has only 5 funds in March 2009 and most of them have entered late. The values of normalized HHIs shown in the Table 3 reveals that the indices were never lower than 0.2226. Clearly this sector is highly concentrated. However, from Figure 1 we see that the trend in the indices were downwards during the period under study. In other words competition within Private Sector Foreign at very low level but the trend shows that competition is slowly increasing in the sector.

The proportion of shares of different funds within Private Joint Venture Indian Dominated and their ranks are also shown in the Table 2. In March 2009 the HDFC Asset Management was at the top in the sector with 32.2% share of assets and the ICICI Prudential Asset Management was the next with 28.5% share. However, the ICICI Prudential Asset Management was at the top till September 2007. Both were competing with each other for the first rank in the period. The third rank was held by Birla Sun Life through out the period. Its share in the assets, however, has increased from 20.2% in March 2003 to 26.1% in March 2009. The DSP Merrill Lynch also maintains its 4<sup>th</sup> rank consistently in the period. Its share of assets was 8.4% in March 2003 and 8.0% in March 2009. In the intermediate period its shares in AUM were a bit higher, varying between 10.1 and 14.6%. The values of normalized HHIs obtained in the Table 3 shows that the indices were less than 0.1 during the period from

March 2003 to March 2009. They ranged between 0.0552 and 0.0989. It can therefore be said that funds in this sector were functioning in highly competitive manner. From Fig. 1 we can see some downward trend in the indices during the period under study although in the recent past it has upward movement providing a mixed nature of the trend.

The proportion of shares of different funds within Private Joint Venture Foreign Dominated and their ranks are also shown in the Table 2. Two funds HSBC Asset Management and Principal PNB Asset Management both together had more than 70% assets in March 2009. In the period under study the both funds held first two ranks. ING Investment Management was at the rank 3 in March 2009 with 11.1% share of AUM. JP Morgan Asset Management stood at the rank 4 with 10.7% of assets. In this sector only 4 or 5 funds were active during the period. The values of normalized HHIs obtained in the Table 3 shows that the indices were always less than 0.18 however they were at some point below 0.1 or above. Thus we may see that this sector was either moderately concentrated or unconcentrated most of the times. From Figure 1 we do not find a visible trend in these indices during the period under study.

### **Trends of Competition**

Table 4 provides ranks of time, NHHIs in specified categories and Spearman's rank correlation coefficients between time and NHHIs of specified categories. Comparing the calculated values with the tabulated values shown in the Table 5, following results about the trend in competition for the different groupings of the Mutual Funds in India have been drawn.

Calculated absolute value of Spearman's rank correlation coefficient  $\rho$  for the complete mutual fund industry in India from the Table 4 is found 0.2198. It is smaller than the tabulated values (0.475 at 5%, 0.673 at 1%) of Spearman's rank correlation coefficient  $\rho$  both at 1% and at 5% level of significance for the one-tail test. Therefore, the null hypothesis is accepted both at 1% and at 5% level of significance. Thus it may safely be concluded that the competition in the overall mutual fund market in India has been at the same level during the period from March 2003 to March 2009.

For the Trend Test among different sectors of the mutual fund market in India, one may see from the Table 4 that the calculated absolute value of Spearman's rank correlation coefficient,  $\rho$  is 0.5769. The absolute value of  $\rho$  is larger than the tabulated value (0.475) of Spearman's rank correlation coefficient  $\rho$  at 5% level of significance. Therefore, the null hypothesis is rejected at 5% level of significance and alternative hypotheses  $H_{12}$  ( $\rho > 0$ ) will be accepted. However, the absolute value of  $\rho$  is smaller than its critical value (0.673) at 1% level of significance. Therefore, the null hypothesis is accepted at 1% level of significance and alternative hypotheses  $H_{12}$  will be rejected. It suggests that there exist moderate evidences to support that the level of competition during the period in this sector had a decreasing trend (Normalized HHI has increasing trend).

For the trend test within Bank-Institution sector of the mutual fund market in India, one may see from the Table 4 that the calculated absolute value of Spearman's rank correlation coefficient,  $\rho$  is 0.7363. It is larger than the tabulated values (0.475 at 5%, 0.673 at 1%) of Spearman's rank correlation coefficient  $\rho$  both at 1% and at 5% level of significance for the one-tail test. Therefore, the null hypothesis is rejected both at 1% and at 5% level of significance and alternative hypotheses  $H_{11}$  ( $\rho < 0$ ) will be accepted. It suggests that there exist strong evidences to support that the level of competition during the period had an increasing trend (Normalized HHI has decreasing trend).

For the Trend Test within Private Sector Indian of the mutual fund market in India, it may be seen from the Table 4 that the calculated absolute value of Spearman's rank correlation coefficient,  $\rho$  is 0.8242. It is larger than the tabulated values (0.475 at 5%, 0.673 at 1%) of Spearman's rank correlation coefficient  $\rho$  both at 1% and at 5% level of significance for the one-tail test. Therefore, the null hypothesis is rejected at both 1% and at 5% level of significance and alternative hypotheses  $H_{12}$  ( $\rho > 0$ ) will be accepted. Thus it may be concluded that the competition within Private Sector Indian funds has a decreasing trend (Normalized HHI has increasing trend) during the period March 2003 to November 2007.

For the Trend Test within Private Sector Foreign of the mutual fund market in India, it may be seen from the Table 4 that the calculated absolute value of Spearman's rank correlation coefficient,  $\rho$  is 0.8392. It is larger than the tabulated values (0.475 at 5%, 0.673 at 1%) of Spearman's rank correlation coefficient  $\rho$  both at 1% and at 5% level of significance for the one-tail test. Therefore, the null hypothesis is rejected at both 1% and at 5% level of significance and alternative hypotheses  $H_{11}$  ( $\rho < 0$ ) will be accepted. Thus it may be concluded that the competition within Private Sector Foreign funds has an increasing trend (Normalized HHI has decreasing trend) during the period March 2003 to November 2007.

For the Trend Test within Joint Venture Indian Dominated of the mutual fund market in India, it is observed from the Table 4 that the calculated absolute value of Spearman's rank correlation coefficient,  $\rho$  is 0.6868. It is larger than the tabulated values (0.475 at 5%, 0.673 at 1%) of Spearman's rank correlation coefficient  $\rho$  both at 1% and at 5% level of significance for the one-tail test. Therefore, the null hypothesis is rejected at both 1% and at 5% level of significance and alternative hypotheses  $H_{11}$  ( $\rho < 0$ ) will be accepted. It suggests that there clearly strong evidences to support that the level of competition during the period had an increasing trend (Normalized HHI has decreasing trend).

Calculated absolute value of Spearman's rank correlation coefficient  $\rho$  within Joint Venture Foreign Dominated in India from the Table 4 is found 0.1374. It is smaller than the tabulated values of Spearman's rank correlation coefficient  $\rho$  both at 1% and at 5% level of significance for the two-tail test also for the one-tail test. Therefore, the null hypothesis  $H_0$  ( $\rho = 0$ ) is accepted both at 1% and at 5% level of significance. Thus it may safely be concluded that the competition within Joint Venture Foreign Dominated mutual fund market in India has been at the same level during the period March 2003 to March 2009.

The only study available by Sumalatha (2008) for the period 2003-2006, observed that over all Indian mutual fund industry had high level of competition and the competition had increased among the mutual funds over the said period. From the Figure 1 we may see this trend having little downwards inclination in the NHIs during the period 2003-2006 but for the whole period March 2003- March 2009 we do not find any directional trend from the graph instead we may see some upward movement in the recent period. Our statistical test also confirms that the levels of competition were at the same level during the period. However, we have also observed high level of competition in over all Indian mutual fund industry.

## CONCLUSIONS

The analysis made in this study reveals the existence of unconcentrated mutual fund industry in the country. Evidently, there exists substantial degree of competition among all the mutual funds in India. The competition between different sectors of the mutual funds was also found at high level. The competition within Bank-Institution funds was found at very low level in most part of the period. This sector is comprised mostly of public sector funds

and their activities are not showing encouraging trends. The funds within Private Sector Indian and Private Sector Foreign both were also concentrated providing low level of competition therein. The funds within Private Joint Venture Indian Dominated were found functioning in highly competitive way. The funds within Private Joint Venture Foreign Dominated were moderately competitive during some portion of the period and competitive in the rest. The study reveals that Private Joint Ventures (both Indian and foreign dominated) were working in competitive way while competition in the Private Sector (both Indian and foreign) were at low level. From the trend analysis for the period March 2003 to March 2009, it has been observed that there exists a lack of trend in the competition during the period in the overall mutual fund market and within Private Joint Venture Foreign Dominated funds in India. However, there is significant evidence of decreasing trend in the competition between different sectors during the period. The study also found strong evidences of an increasing trend in the competition within Bank-Institution, Private Sector Foreign and Private Joint Venture Indian Dominated funds. However, we have found strong evidence of decreasing trend in competition among mutual funds within Private Sector Indian. For the steady growth of the mutual fund industry and for the protection and advantage of investors, healthy atmosphere of competition is necessary. Different sectors and especially Bank-Institution (public sector) must be encouraged to improve their professional skill and performance. Indian Private Sector and Foreign Private Sector which are highly concentrated require necessary regulatory support for easy entry, efficient management and superior skill to increase the competition therein. Although, the private sector was able to attract large proportion of assets the increasing trend of concentration of a few private funds is not good for the healthy growth of mutual fund industry in the long term.

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