

Operating Efficiency of Select Stock Broking Companies in India: An Analysis

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ABSTRACT

The equity broking industry in India has several unique features. The robustness of the Indian markets today is attributable to a healthy blend of the quality of market structure and efficient intermediation. Even as several countries are instituting procedures to commence equity derivative markets, India ranks amongst the top five countries globally in this segment, in less than five years of its introduction. This is an example of the proactive and progressive nature of the Indian brokerage industry. The scope of services have enhanced from being equity products to a wide range of financial services. The tools used for the analysis are Herfindhal's Index. The sample of 22 stock broking companies selected to form the sample set. The K-concentration Ratios indicated that all the selected four stock broking companies are not involved in the perfectly competitive market structure during the study period. The higher values of HHI and n-HHI of the 22 stock broking companies during 2008-2009 and 2009 – 2010 lay above the range of 1000 indicating medium level of concentration and have an oligopoly market control.

Keywords

Market concentration, Market share, k-concentration ratio, Operational efficiency

INTRODUCTION

A simple broking activity involves only the buying and selling of securities for a brokerage, either by them or through their authorized clerks and assistants. The activity of stock broking business starts with an order from a client to purchase or sell specified numbers of shares of a company at specific prices on a day or at a point of time or at the best price in the market on any day. These orders are generally executed by three methods:

- Set off one client's order against another, one sale order against one purchase order of two clients.
- Purchase or sale in the trading ring with the help of a jobber in the market. These orders are executed by the authorised clerks of the broker who go to the trading ring. These deals are all entered into the Souda Block Books of the broker and reported to the stock exchange on a daily basis.
- Purchase or sell for own account as principal vis-a-vis the client. This means that the broker sells from his own inventory of stock or buys on own account from the client. This business of principal to client requires the prior approval of the client in writing as per the existing rules and a separate contract note is to be passed for such deals. But the deal has to be executed at the existing market price and is to be reported to the stock exchange.

The activity of stock broking is a financial service comparable to banks. They deal with money or claims on money such as shares, securities etc. They run into risks in such dealings with all those whom they deal with. Extreme care and risk coverage is necessary so that their credit worthiness, honesty and integrity should not be in doubt at any time.

Leaving aside the general prudence and caution necessary for them, they should have expertise and knowledge of the markets, risks involved in all investments and proper appreciation of the risk- return profiles of various scrips traded. The restraint on over-trading and professional approach to clients and sub-brokers and adoption of systems approach to their dealings will go a long way in their meeting the challenges they face in the market. Research and analysis of the companies they trade in would impart professionalism to them.

Brokers are essentially intermediaries as between buyers and sellers in securities whether they are corporate

securities or govt. securities. This process involves the use of number of sub-brokers, dealing with all types of clients, including unscrupulous traders and speculators, inefficient exchange authorities, clearing house bankers and companies listed on the exchange in whose scrips they trade. To protect themselves from heavy paper work, tension and high risks reforms have to start from brokers themselves in the following forms:

- (a) More honest and transparent dealings
- (b) Fair practices and better services
- (c) Adoption of a systems approach through proper computerization
- (d) Strengthening of the capital base, by converting individual proprietary concerns into companies and security firms.
- (e) Adoption of some uniform rules for dealings with clients and sub-brokers

SEBI REGISTERED MARKET INTERMEDIARIES (2011-2015)

Market Intermediaries	2010- 11	2011- 12	2012- 13	2013-14	2014-15	Apr 14- Dec 14	Apr 15- Dec 15
Brokers(Cash Segment)	9,235	9,307	10,128	9,411	5,899	7,306	4,824
Corporate Brokers (Cash Segment)	4,563	4,672	5,113	4,917	3,677	4,196	3,405
Sub-brokers(Cash Segment)	83,952	77,165	70,178	51,885	42,409	44,540	36,683
Brokers(Equity Derivatives)	2,301	2,337	2,957	3,051	2,761	3,008	2,762
Brokers(Currency Derivatives)	1,894	2,173	2,330	2,395	2,404	2,406	2,408

Source: SEBI

RESEARCH OBJECTIVES

1. To review the history & growth of Stock Broking Firms in India.
2. To evaluate the operational efficiency of the chosen companies in the stock broking industry.

PANORAMA OF PAST STUDIES

- Dr. S.M. Uvaneswaran (2011) in his research work on “Operating Efficiency of Public Sector Commercial Banks in India during the First and Second Generation Reforms” evaluated the operating efficiency of all the Public Sector Banks in India. The study was confined to secondary data consisting of 30 years. The Herfindhal’s index of concentration has been computed to each unit of PSBs. From the five absolute concentration indices, it becomes evident that the State Bank of India had the maximum relative shares. The other leading banks contributed less than 2 percent for each year during 1992-2001 with regard to the concentration indices of all the five absolute parameters namely- net profit, total income, total expenditure, spread and burden. Further the overall concentration indexes for most of the five parameters, and during 1998, the overall index of two parameters (namely net profit and total expenditure) was at the lowest. The implications are that the majority of the banks enjoyed similar degree of efficiency as measured by

burden, more specifically during 1998 (second generation reforms) and similarly few nationalized banks dominated in 1998 and SBI groups dominated in 2002, when measured on the parameter of net profit.

- Joy Chakraborty and Partha Pratim Sengupta(2016) focused their study on “Indian Life Insurance Market and Corporate Performances - A Study of Selected Firms” to evaluate and compare the financial performances, solvency and the market concentration of the four leading life insurers in India namely LIC, ICICI prulife, HDFC standard and SBI Life, over a span of five successive financial years from 2008-2009 to 2012-2013. The tools used for the financial analysis were CAMELS, the solvency ratios, the market concentration Analysis, the Herfindahl Hirschman Index and the Normalised Herfindahl-Hirschman Index. It was found that liquidity was one of the areas of concern for the private life insurers and it required serious improvement to be at par with LIC. There were significant differences observed in the performance of public sector life insurance player with selected private life insurers. The country’s life insurance sector gave indications about a fairly competitive market condition. The study concluded the pre-existing dominance of LIC even after 15 years since the privatization of the country’s life insurance sector.

- Joy Chakraborty(2016) in his study on “Market concentration and firm performances : Evidences from the Indian Life Insurance Industry” made an attempt to evaluate the extent of concentration and competition of 18 Life Insurance Companies in India during the study period from 2008-2009 to 2014-2015. The methodology applied was k-Concentration ratios, the Herfindhal – Hirschman index and the normalized HHI. It was found that the abrupt fall in concentration indicators during the financial year 2014-2015, though by a nominal margin, in contrast to the previous year’s showed emerging signs of a competitive market structure. ICICI Prulife and SBI Life consistently featured as the best performers in the private sector category over the study period. The sharp decline in the concentration indices during the financial year 2009-2010 also provides evidences of an adverse market condition in the country’s insurance sector, against the backdrop of the global meltdown.

METHODOLOGY OF THE STUDY

Exploratory research design was adopted for present study to analyze and interpret the available information. The present study covers the ten financial years from 2005-2006 to 2014-2015. The research concentrated on the financial service sectors. The present study is undertaken with the framework of judgement /purposive sampling technique. The firm level audited financial data is collected by using CMIE prowess database. A list of a total 182 Stock Broking Companies has been generated under the category of fee based financial services over the 10 year period between 2004 and 2015. It was found that out of 182 companies reported by prowess, only 28 companies were BSE listed. Further based on the availability of consistent data for 10 years during the study period from 2004 to 2015, the sample set was constituted. Finally, 22 companies form the sample set for the present study. The companies selected for the present study were Aditya Birla Money, Arihant Capital Markets, B.N.Rathi Securities Limited, CIL Securities Ltd, DB (International) Stock Brokers, Emkay Global Financial Services, Inani Securities, Inditrade Capital, Jhaveri Credits and Capital, Joindre Capital, KBS India, Khandwala Securities, Market Creators, Munoth Capital Markets, NDA Securities, NAM Securities Ltd, RR Financial Consultants, SKP Securities, Stampede Capital, Sugai & Damani Share Brokers, Swastika Investsmart and Vertex Securities Ltd. The tools used for the analysis is Herfindhal’s Index.

MARKET CONCENTRATION ANALYSIS

Market concentration is said to be inversely related to market competition, as the level of competitiveness decreases (concentration increases) or vice-versa, with the increase in the number of new entrants. The concentration measures are used when firms produce a homogeneous product across the industry. The products and services rendered by the institute may not be homogenous across the stock broking companies. However, as brokers collect commissions and render services, commission can be viewed as an output – bundle resulting from sale of various products (services), thereby making it homogenous. As a result, the market structure of an industry can be assessed depending on the market concentration in the stock broking business. The research work made an attempt to assess the operating efficiency, market structure and the extent of concentration and competition prevailing in the chosen stock broking firms. The measures of k-concentration ratios, HHI and n-HHI have been computed for the 22 stock broking companies for the period from 2005-2006 to 2014-2015.

i. k-Concentration Ratios

The k-concentration ratio (CR_k) is obtained as the cumulative market share of the biggest ‘k’ companies in the industry ($1 \leq k \leq N$). The k-Concentration ratio ranges from ‘0’(indicates perfect competition and greater competition) to ‘1’(indicates monopoly market structure), if the market shares are expressed in fractions rather than in percentages. The concentration Ratio is expressed as follows:

$CR_k = \sum S_i$, where S_i = Market shares of individual players in the industry.

ii. Herfindahl – Hirschman Index (HHI)

This indicator is a measure of industry concentration and obtained as the sum of the squares of market shares for each firm. The Herfindahl index ranges from a low of 0, indicating perfect competition, to a higher of 10,000, indicating monopoly. Greater values mean greater concentration, less competition and more market control held by individual firms, if the market shares are expressed in percentages rather than fractions. The formula for calculating the HHI is as follows:

$HHI = \sum S_i^2$, ($i=1$ to N), where S_i = Market shares of Individual players in the industry.

Table 1. Market Shares of the Stock Broking Industry (in fractions)

No.	Company Name	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
1	Aditya Birla Money	0.023	0.0413	0.0378	0.2696	0.2534	0.204	0.1749	0.1708	0.1686	0.1554
2	Arihant Capital Markets	0.0295	0.0265	0.0242	0.0317	0.0298	0.0767	0.0657	0.0642	0.0634	0.0584
3	BNRathi Securities	0.0125	0.0112	0.0144	0.0112	0.0115	0.0093	0.008	0.0078	0.0077	0.0071
4	CIL Securities	0.0415	0.0372	0.0341	0.0243	0.0229	0.0184	0.0158	0.0154	0.0152	0.014
5	DB (International) Stock Brokers	0.0249	0.0223	0.0205	0.0146	0.032	0.1289	0.1105	0.1079	0.1065	0.0982
6	Emkay Global Financial Services	0.1486	0.1808	0.1656	0.1181	0.1112	0.09	0.0772	0.0753	0.0744	0.0686
7	Inani Securities	0.0378	0.034	0.0311	0.0222	0.0208	0.0168	0.0144	0.0141	0.0139	0.0128
8	Inditrade Capital	0.0761	0.0953	0.1581	0.1128	0.1066	0.086	0.0737	0.072	0.0711	0.0655
9	Jhaveri Credits and Capital	0.0536	0.0481	0.0441	0.0314	0.0296	0.0238	0.0204	0.0199	0.0197	0.0181
10	Joindre Capital	0.0924	0.083	0.076	0.0673	0.0633	0.051	0.0437	0.0427	0.0421	0.0388
11	KBS India	0.035	0.0314	0.0288	0.0205	0.0193	0.0314	0.0269	0.0263	0.0259	0.0239
12	Khandwala Securities	0.0867	0.0848	0.0815	0.0581	0.0546	0.044	0.0377	0.0368	0.0363	0.0335
13	Market Creators	0.0415	0.0372	0.0341	0.0243	0.0229	0.0184	0.0158	0.0154	0.0152	0.014
14	Munoth Capital Markets	0.0083	0.0074	0.0068	0.0049	0.0411	0.0331	0.0284	0.0277	0.0274	0.0252
15	NDA Securities	0.0423	0.0379	0.0347	0.0248	0.0233	0.0188	0.0161	0.0157	0.0155	0.0143
16	Nam Securities	0.0253	0.0227	0.0208	0.0148	0.0139	0.0112	0.0096	0.0094	0.0093	0.0086
17	RR Financial Consultants	0.0459	0.0412	0.0377	0.0269	0.0253	0.0407	0.0349	0.0341	0.0337	0.031
18	SKP Securities	0.0419	0.0376	0.0383	0.0273	0.0257	0.0207	0.0177	0.0173	0.0171	0.0158
19	Stampede Capital	0.0424	0.038	0.0349	0.0248	0.0234	0.0208	0.041	0.0637	0.0639	0.064
20	Sugal & Damani Share Brokers	0.0229	0.0209	0.0205	0.0304	0.0286	0.023	0.0197	0.0193	0.019	0.0175
21	Swastika Investsmart	0.0249	0.0224	0.0205	0.0146	0.0135	0.0109	0.0093	0.0091	0.009	0.0083
22	Vertex Securities	0.043	0.0386	0.0353	0.0252	0.0274	0.0221	0.1385	0.1352	0.1452	0.2069

Source: www.moneycontrol.com, www.nse.com, www.bse.com

iii. Normalised Herfindahl-Hirschman Index (NHHI)

It is calculated to find out more precisely the level of concentration and competition prevailing in the stock broking industry. The normalized Herfindahl-Hirschman index also ranges from 0 to 1.

$NHHI = [HHI - (1/N)] / [1 - (1 / N)]$, where HHI is the usual Herfindahl-Hirschman Index and N is the number of firms.

CONCENTRATION RATIOS AND INDICES

The individual market share values of 22 Stock Broking companies for the period from 2005-2006 to 2014 -2015 are depicted in table 1. It highlights that the Aditya Birla Money, DB (International) Stock Brokers, Emkay Global Financial Services, Inditrade Capital, Joindre Capital and

Vertex Securities shows an average market share ranging is between 15% to 6% respectively in the study period. Aditya Birla Money, DB (International) Stock Brokers and Inditrade Capital are featured as top players in select stock broking companies immediately following Emkay Global Financial Services. The average market value of shares for the remaining companies range between 1% and 5 % during the study period.

Individual market share of top four stock broking firms

The respective market share of each of the best-performing individual stock broking company for their years of operation i.e., 2005-2006 to 2014-2015 viz., Aditya Birla Money, DB (International) Stock Brokers, Emkay Global Financial Services and Inditrade Capital has been shown in the table 2.

Table 2. Individual Market Share of Top Four Stock Broking Firm (in fractions)

Years	Aditya Money	Birla	DB (International) Stock Brokers	Emkay Global Financial Services(Cr ₁)	Inditrade Capital	Cr ₄
2005-06	0.0230		0.0249	0.1486	0.0761	0.2726
2006-07	0.0413		0.0223	0.1808	0.0953	0.3397
2007-08	0.0378		0.0205	0.1656	0.1581	0.382
2008-09	0.2696		0.0146	0.1181	0.1128	0.5151
2009-10	0.2534		0.0320	0.1112	0.1066	0.5032
2010-11	0.2040		0.1289	0.0900	0.0860	0.5089
2011-12	0.1749		0.1105	0.0772	0.0737	0.4363
2012-13	0.1708		0.1079	0.0753	0.0720	0.4260
2013-14	0.1686		0.1065	0.0744	0.0711	0.4206
2014-15	0.1554		0.0982	0.0686	0.0655	0.3877

Source: Computed

From the table 2 it is understood that, among the select Stock Broking companies, Emkay Global Financial Services stands toppest in the market share values from 2005-2005 to 2010 -2011 consecutive years. Further, from 2011-2012 to 2014-2015, Emkay Global Financial Services holds the position in the top four stock broking companies. Hence, Emkay Global financial services has been considered as CR₁. During the study period Aditya Birla Money held the top position in 7 years out of 10 years of the study period, DB (International) Stock Brokers occupied the top position in 5 years out of 10 years and Inditrade capital grabbed the top position in 6 years out of 10 years. These companies also hold the position in the top four Stock Broking Companies and are

considered as CR₄. These four firms enjoyed nominal market shares in the range of 2% to 26 % during the period under study.

K-Concentration Ratios

Table 3 given below presents the widely used k-concentration ratios i.e., CR₁ (single firm concentration) which has been shown in the context of single largest player (k=1) and CR₄ (four firm concentration) the top-four players dominating the select stock broking companies during the study period from 2005-2006 to 2014-2015. The four firm concentration indices are calculated on the basis of their individual market shares.

Table 3. K-Concentration Ratios (in fractions)

Indicators	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
CR ₁	0.1486	0.1808	0.1656	0.1181	0.1112	0.09	0.0772	0.0753	0.0744	0.0686
CR ₄	0.2726	0.3397	0.382	0.5151	0.5032	0.5089	0.4363	0.426	0.4206	0.3877

Source: Computed

Based on the results shown in the table 3, it is reported that the differences between CR₁ and CR₄ recorded a highest margin of almost 41.89% during the financial year 2010-2011 but gradually streamlined over the next few years within a level of 31% to 35%.The concentration ratio of the Emkay Global Financial Services (CR₁) depicted maximum and minimum figures of 18% and 6%, during the years 2006 -2007 and 2014-2015 respectively. The concentration ratios of the four largest firms (CR₄) in the stock broking industry inclusive of Emkay Global Financial Services (CR₁) depicted the maximum and minimum figures of 51% and 27 % in 2008-2009 and 2005-2006 respectively. From 2008-2009 to 2010-2011 it is in medium concentration, these firms are in the stage of oligopoly market structure and for the remaining periods it shows a monopolistic type of market structure. The concentration ratios depicted a sharp decline during the financial year 2011-2012 showing the effects of global

financial crisis. The K-concentration Ratios indicated that all the selected four stock broking companies are not involved in the perfectly competitive market structure during the study period.

Concentration Indices

Table 4 represents the HHI and the normalized-HHI values covering all the stock broking firms under review over the period from 2005-2006 to 2014-2015.For this purpose, the sum of the squares of market shares of all the individual stock broking firm under review has been considered for the determination of both the HHI and the normalized – HHI values over the study period. The determination of the n-HHI indices was based upon the usual HHI values and reciprocal of the number of firms considered for the study period of ten years from 2005-2006 to 2014 -2015.

Table 4. HHI & N-HHI Concentration Indices (in fractions)

Indicators	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
HHI	6.622	7.5097	8.1442	11.6393	10.5699	9.1988	8.7785	8.6136	8.7355	9.9756
n-HHI	6.8897	7.8196	8.4844	12.1459	11.0256	9.5892	9.1489	8.9761	9.1038	10.4030

Source: Computed

It can be seen from the table 4 that the 22 stock broking firms' HHI and n-HHI values lay within the minimum and maximum ranges of 6.22 and 12.14 respectively over the study period. The HHI and n-HHI values of the stock broking firms showed an increasing trend over the study period till 2008-2009, but later showed a fluctuating trend in the study period, due to the effects of global financial crisis during 2007-2008. The higher values of HHI and the n-HHI of the 22 stock broking companies during 2008-2009 & 2009 – 2010 lay above the range of 1000 indicating medium level of concentration and has a oligopoly market control, also there are no adverse effects on competition firms. For the remaining period the index values are below the range of 1000, thereby indicating the

market structure of monopolistic competition with low concentration. It was further remarkable to witness some reversal in the fall of the concentration indices during the financial year 2014-2015 due to the stabilization of operations of the stock broking companies.

FINDINGS OF THE STUDY

Operational efficiency is a market condition that exists when participants can execute transactions and receive services at a price that equates fairly to the actual costs required to provide them. In this study, the measures of k-Concentration ratios, HHI and n-HHI were used.

- The Aditya Birla Money, DB (International) Stock Brokers, Emkay Global Financial Services, Inditrade Capital, Joindre Capital and Vertex Securities shows an average market share ranging is between 15% to 6% respectively in the study period. The average market value of shares for the remaining companies ranges between 1% and 5 % during the study period.
- Emkay Global Financial Services stands toppest in the market share values from 2005-2005 to 2010 - 2011 continuously. Further, from 2011-2012 to 2014-2015, Emkay Global Financial Services holds the position in the top four stock broking companies. Hence, Emkay Global financial services has been considered as CR₁. During the study period Aditya Birla Money holds the top position around 7 years, DB (International) Stock Brokers for 5 years and Inditrade Capital for 6 years among the selected stock Broking companies. These companies hold the position in the top four stock broking companies and have been considered as CR₄. These four firms enjoyed nominal market shares in the range of 2% to 26% during the study period.
- The concentration – ratio of the Emkay Global Financial Services (CR₁) depicted maximum and minimum figures of 18% and 6%, during the years 2006 -2007 and 2014-2015 respectively. The concentration ratios of the four largest firms (CR₄) in the stock broking industry inclusive of Emkay Global Financial Services (CR₁) depicted the maximum and minimum figures of 51% and 27 % in 2008-2009 and 2005-2006 respectively. These firms are in medium concentration and in the stage of oligopoly market structure from 2008-2009 to 2010-2011 and thereafter a monopolistic type of market structure in the rest of the study period.
- Twenty two stock broking firms' HHI and n-HHI values lay within the minimum and maximum ranges of 6.22 and 12.14593 respectively over the study period. The higher values of HHI and n-HHI of the 22 stock broking companies during 2008-2009 and 2009 – 2010 lay above the range of 1000 indicating medium level of concentration and have an oligopoly market control. The index values (2010-2015) are below the range of 1000, thereby indicating the market structure of monopolistic competition with low concentration.

CONCLUSION

The two measures of concentration used in the present study exhibited similar patterns over the period of the study. The four firm concentration (k=4) ratio recorded maximum figure of 51% in 2008-2009 followed by continuous decline trend in the market value of shares due to 2008 global financial crisis. In the market concentration analysis of k-Concentration ratio, HHI and n-HHI indices, the concentration is medium from 2008-2009 to 2010 - 2011 and have oligopoly market control and monopolistic competition market structure prevailing from 2010-2012 to 2014-2015 periods under review. During 2013-2014, FDI stood at 36.04 billion US Dollar in the stock broking sector, it rose to 55.46 billion US dollar during 2015-2016. This FDI policy resulted in a sudden decline in concentration during 2014-2015. Hence it paved a way for new participants to enter into the competitive market. Among the top four stock broking companies, Emkay Global Financial Services consistently featured as the best performer in the stock broking companies chosen for the study.

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