

# MARKET STRUCTURE OF INDIAN BANKING SECTOR

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## ABSTRACT

The study is an attempt to examine the nature and extent of changes in the structure of Indian banking sector. The plausible reasons for the change in structure have also been examined. Competitiveness and consumer welfare is determined by market structure. The empirical evidence of changes in the structure of banking sector in India from 1995-96 to 2008-09 has been examined to analyse the competitiveness of banking sector. The standard methods of measuring market structure such as Concentration ratio, Herfindahl Index and Coefficient of Variation of major banking variables like total assets, deposits, advances and incomes have been calculated and analyzed for the scheduled commercial banks in India. The market structure should normally lead to more competitive environment due to liberalization, privatization and globalization. Depending upon the ability of the Indian banks to compete with each other and with foreign banks, market can be classified in various types, such as perfect competition, monopoly, monopolistic competition or oligopoly. During the period under study in Indian Banking Sector it was witnessed that concentration had declined. But still the top five banks are having an average share of 42% which is quite high in case of all the variables like assets, deposits, advances and income. Over the sample period of 12 years in case of HHI index income declined greatest at the rate of -3.81 percent compounded annually followed by total assets (-3.70 percent), advances (-2.76 percent) and deposits (-2.50 percent) respectively.

**Keywords:** Market structure, Competition, Concentration ratios, HHI, Coefficient of Variation, Indian Banking Sector

## 1. Introduction

Indian banking sector, had moved from regulated sector to a deregulated one after 1991. The major reform process was triggered off by the changes taking place in global financial sector during 1980's and broad economic reforms initiated in India due to balance of payment crisis of 1991. The thrust of reforms was to enhance the productivity and efficiency of the system by enhancing competition. Being the member of WTO, the Indian banking sector had to be opened for international players. The signing of WTO meant greater competition from foreign and domestic bankers with the implementation of GATS provisions. Reforms were also undertaken due to commitments made by India under the (GATS), which had lead to opening of

## HSB Research Review

the banking sector to private banks and enhanced the entry of foreign banks in India (Mode 3 - Commercial presence). India has exclusively made commitments in Mode 3, while in other modes, namely 1, 2 and 4, it has not made any commitments.

Competitive environment was promoted by Narsimhan Committee in 1991 and 1998. In its stocktaking of the recommendations of the first phase of reforms, the Committee observed that one of the more significant measures instituted since 1991 has been the permission for new private banks to be set up, and the more liberal approach towards foreign bank offices being opened in India. These steps have enhanced the competitive framework for banking - the more so as the new private and foreign banks have higher productivity levels based on newer technology and lower levels of manning (Report by CFS Committee, Government of India, 1998, Para 1.21) and more recently "The competition induced by the new private sector banks has clearly re-energized the Indian banking sector as a whole, new technology is now the norm, new products are being introduced continuously, and new business practices have become common place." (Rakesh Mohan, RBI, 2004). A major requirement for enhancing competition in an economy is the removal or minimization of entry barriers, which will lead to cheap availability of finance. Theoretical results demonstrate that monopolistic market power of banks raises the opportunity cost of capital and thus, tends to make financing more expensive (Smith, 1998). In other words lack of competition in banking could thus adversely affect economic development.

The main drivers of competition in banking sector are liberalized entry of new private banks and foreign banks, and enhanced limit of FDI in banks which was undertaken in early 2000.

Under Commercial presence (Mode 3) of GATS foreign banks with branch presence were allowed FDI in private sector banks. With liberalisation of the FDI regime, FDI in the banking sector was brought under the automatic route. With a view to further liberalise foreign investment in the banking sector, the Government announced (vide GOI press note of March 5, 2004) an increase in the FDI limit in private sector banks from 49 per cent to 74 per cent under the automatic route, including investment by FIIs, subject to guidelines issued by the Reserve Bank of India from time to time. In several old and new private sector banks, non-residents now hold majority equity (Table 1 Annexure).

All these measures have resulted in fierce competition to the public sector banks, as the new private sector banks having majority equity shareholding of Foreign Institutional Investors are fully computerized and equipped with latest technology. The underlying factor was the availability of sufficient capital for appropriate operations. Hence, competitive environment, as promoted by two committees and by implementation of GATS, need to be examined.

The objective of this paper is simple one. It examines the resultant market structure of the banking industry due to the structural changes. The structure is examined using several

standard methods, like, Herfindahl Index, Concentration Index and coefficient of variation.

Hence this paper is organized as follows. The following section presents the relevant literature on the measures of concentration in banking industry. Section 3 gives data base and methodology used in the study. Section 4 discusses the empirical results of market concentration in Indian banking sector. And finally Section 5 concludes the paper.

## 2 Review of Literature

Concentration refers to the degree of control of economic activity by large firms. There is little literature on the direct relationship between competitive conduct of financial institutions and its bearing for structure as measured in terms of concentration. This is surprising, given that issues of competition and concentration in the banking industry are heavily debated by policymakers.

In the context of financial institutions, studies on determinants of market concentration have been few. Two hypotheses of superior performance have been advanced. Traditional industrial organisation theory focuses of the Structure-Conduct- Performance (SCP) paradigm which states first, structure is said to affect conduct and second, conduct is perceived to influence performance. This implies that concentration in the banking industry can generate banking power that allows banks to lower deposit rates and increase lending rates and earn monopolistic profits. Market structure is reflected in Concentration ratios (CR ratios) for the largest firms and the Hirschman Herfindahl index (HHI). This literature is essentially based on the assumption that concentration weakens competition by fostering collusive behavior among firms and the efficient structure hypotheses, which states that superior technological efficiency leads to superior performance. However, few studies have explored the determinants of concentration in the financial services industry.

Increased market concentration was found to be associated with higher prices and greater than normal profits (Bain, 1951). Spinlock (1985) and Evan off and Fortier (1988) argue that higher profits in concentrated markets could be the result of greater productive efficiency. In Europe, on the other hand, structural factors appeared to be more important and the SCP hypothesis seemed to hold (Goddard et al., 2001).

The non-structural approach explains that factors other than market structure and concentration may affect competitive behaviour, such as entry/exit barriers and the general contestability of the market (Baume et al. 1982; Bresnahan, 1989; Rose and Panzer, 1977; Panzer and Rose, 1987). These latter approaches have been developed in the context of the New Empirical Industrial Organisation (NEIO) literature.

While tests of market power carried out employing the traditional SCP approach (and recent variations of it), observe the structure of the market (e.g. concentration levels, number of firms) and relate this to the conduct (e.g. pricing policies)

and performance (e.g. ROA, ROE) of firms; in nonstructural approaches empirical studies do not observe the competitive environment but they attempt to measure/infer it. Probably the most important advantage of non-structural approaches is that it cannot be assumed *a priori* that concentrated markets are not competitive because contestability may depend on the extent of potential competition (see also Goddard et al., 2001: 81)

Biker (2004) underscores that concentration may have an impact on competition and that increasing the size of financial firms has substantial bearing for financial stability. Following an approach pursued in the industrial organization literature, he proposes that competition can be measured by the H-Statistic by Panzer and Rose (1987). Biker and Groeneveld (2000) test the competitive structure in the banking industry in the EU as a whole as well as in individual EU countries and provide evidence that European banking sectors operate under conditions of monopolistic competition, albeit to varying degrees. De Bandit and Davis (2000) assess the effect of EMU on market conditions for banks operating in the Euro zone over the period 1992-96 and compare the behaviour of large and small EMU banks with a US banking sample. They find that the behaviour of large banks was not fully competitive as compared to the US, while the level of competition appears to be even lower for small institutions especially in France and Germany.

Bikker and Haaf (2002) examined competitive conditions and market structure for 23 countries over the 1990s and find monopolistic competition in all countries. Their estimations also show that competition is weaker among small banks operating mainly in local markets and stronger in international markets where large banks usually operate. Competition is found to be stronger in Europe than in Canada, Japan or the US. Claessens and Laeven (2004) carried out a major study of competition and concentration that includes 50 developed and developing countries' banking sectors. They found the systems with greater foreign bank entry, and fewer entry and activity restrictions to be more competitive. They also found no empirical evidence that the competitiveness measure relates negatively to the banking system concentration. Weill (2004) measures banking competition for a sample of 12 EU countries over the period 1994-99 and found monopolistic competition for all countries.

Thus, the case for using concentration as a proxy for competition can be contested. This is critical for the inference of policy implications since concentration does not necessarily imply the lack of competition, given that factors other than competition may drive concentration. For instance, regulatory initiatives to increase capital may spark off a wave of mergers that considerably increases the level of concentration in the industry. Moreover, a banking system with high entry barriers, in which a small number of institutions dominate the industry, can nevertheless be characterized by competition. In a cross-country study using structural model covering 50 major

advanced and emerging market economies, Claessens and Laeven (2003) found that lower activity restrictions in the banking sector and greater foreign bank presence make banking systems more competitive. Emerging economies in the study included Argentina, Brazil, Chile, India, Indonesia, Malaysia, the Philippines, Russian Federation and Turkey, among others. However, they found no evidence that banking system concentration was negatively associated with competition. An important point that the recent literature on concentration-competition suggests is that the number of banks and the degree of concentration are not, in themselves, sufficient contestability. Other factors also played a strong role, which include regulatory policies that promote competition, a well-developed financial system, the effects of branch networks, and the effect and uptake of technological advancements (Northcott, 2004). Most of the empirical evidences in the literature are, however based on developed economies. The financial structure in many developing countries being sharply different from the developed ones, it is necessary to examine to what extent the established empirical findings in the developed economies apply to developing countries like India.

In the light of the above discussion, to evaluate the impact of various changes specifically on competition in the banking system, a number of concentration indicators have been analyzed.

Recent survey of Bikker and Haaf (2001a) lists 10 such measures proposed and used in the literature. Among these, the more popularly used ones are *k*-Bank Concentration Ratios and Herfindahl-Hirschman Index (HHI). (The Lorenz Ratio (Gini Coefficient), a popular measure in the literature on income inequality, is also used to measure industrial concentration)<sup>1</sup>. In India, some of these measures have been used by the official agencies to address similar problems. It may, however, be noted that the scope of these popular measures is somewhat limited. For example, the HHI and the Gini coefficient are based on the variance of market shares. So, far as market concentration is concerned, policy makers are in most cases not interested in the variance *per se*, but at the tails of the distribution of market shares. One of the most widely used measures is Coefficient of Variation, which studies dispersion around the mean and which overcomes this problem. Therefore, an attempt is made to examine the structure of Indian banking sector with the help of HHI index, K-bank concentration ratio, and coefficient of variation. These measures have been studied with respect to four major indices of banking development i.e. total assets, deposits, advances and income.

### 3. Research Methodology

This study is restricted to Scheduled Commercial banks excluding RRBs. It estimated the measures of concentration at industry level with respect to total assets, total deposits, advances and total income.

The measures of Concentration Indices applied are the following:

- The K-bank Concentration Ratio
- Herfindahl-Hirschman Index (HHI)
- Coefficient of Variation

### 3.1 The K-bank Concentration Ratio

K-bank concentration ratio is the most commonly used measure of concentration because of its simplicity and limited data requirements. It is a very popular measure of banking literature (Bikker, 2004). It sums up the market shares of K largest banks. It gives equal weight to K leading banks, but neglects smaller banks. It varies between zero and one (if market shares are measured in fractional form instead of percentage form).

$$CR_k = \sum_{i=1}^K S_i \quad S_i = X_i / \sum X_i$$

where  $S_i$  = market share of the  $i^{th}$  bank

Where  $\sum X_i$  = total of all assets/ deposits/ advances/income of all commercial Banks in the year and  $i=1,2,3 \dots K$ (nos. of banks )

### 3.2 Herfindahl-Hirschman Index (HHI)

The Herfindahl-Hirschman Index is second most popular summary measure of market concentration. It is defined as the sum of the squares of the market shares of each bank in the market. This is also often called full information index as it captures features of the entire distribution of bank sizes. It takes the form:

$$HHI = \sum_{i=1}^K (S_i)^2$$

HHI = Overall Index

Where  $S_i$  is the market share of bank  $i$  in the market, and  $K$  is the number of banks.

The index ranges from 10,000 in the case of monopoly (or 1.0 when market share is in fractional form) to close to zero when there are large numbers of firms with no one firm having substantial market share. HHI will vary not only with the proportion of deposits/assets held by an arbitrary number of large K banks in the market, but also with the relative distribution of deposits/assets among all banks in the market. In the US, the HHI plays a significant role in the enforcement process of anti-trust laws in banking. HHI is used for scrutinizing proposed merger of banks (Shull and Hanweck, 2001). Since 1982, the US Department of Justice has based its merger guidelines on the HHI.

A small index indicates a competitive industry with no dominant players. Increases in the Herfindahl index generally indicate a decrease in competition and an increase of Market power, whereas decrease indicates the opposite. As the market concentration increases, competition and efficiency may decrease and the chances of collusion and monopoly may increase.

### 3.3 Coefficient of variation

The coefficient of variation is computed using following procedure:

$$C.V. = (\sigma/\bar{X}) \times 100$$

$$\text{Mean } (\bar{X}) = \sum X/N$$

Where  $\sum X$  = sum of observations in a series.

$N$  = Number of items

$$S.D. (\sigma) = \sqrt{\sum x^2/N}$$

Where  $x = (X - \bar{X})$ ,  $\bar{X}$  is the mean of the series and

$(X - \bar{X})$  is the deviation from the mean

$N$  = Number of items

## 4. Data Sample

This paper is aimed to study of all Scheduled Commercial banks in India. The commercial banks include public sector banks which comprise of nationalized banks and State Bank of India, private and Foreign banks. The study also includes the foreign banks in India because, though the total share of foreign banks is only 5-6%, they exert considerable competitive pressure after the signing of WTO agreement under which the economy was opened to foreign banks partially. Hence, their inclusion may positively affect the quality of results.

Data has been taken from *Statistical Tables Relating to Banks in India*, an annual publication of the Reserve Bank of India (RBI), which provides bank-wise information on balance sheet as well as profit and loss indicators and various publications of RBI, and their site [www.rbi.org.in](http://www.rbi.org.in).

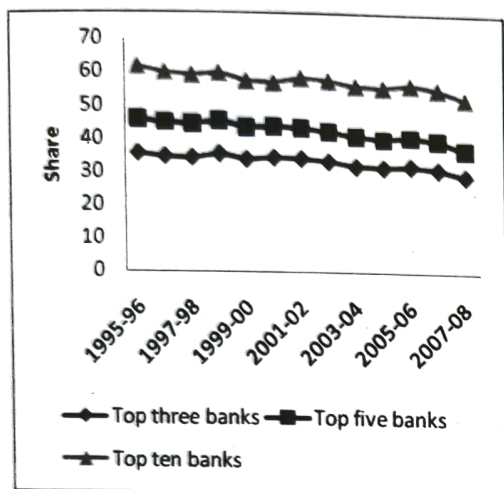
## 5. Data Analysis and Results

A decrease in concentration is visible in all the four major variables of the banking sector namely assets, deposits, advances and income. Specifically, the asset share of the top five banks has declined from 45.76 percent in 1995 to 37.0 percent by the end of 2008. The asset, loan and deposit shares of the top 10 banks also fell from close to 62% to 52%, a decline of 10%. All this shows that because of deregulation, liberalization, privatization and globalization, competition increased which led to reduction of concentration ratio in terms of four selected variables. In general if the CR-5 measure is less than 50 (indicating that the five largest firms own less than 50% share of the market) then the industry is considered to be competitive, with a number of other firms competing, but none owning a large chunk of market. So, it clearly emerges that concentration index have declined in the post reform (GATS) period. This clearly establishes the role of financial liberalisation in lowering concentration, despite the number of bank mergers and acquisitions, during the post reform

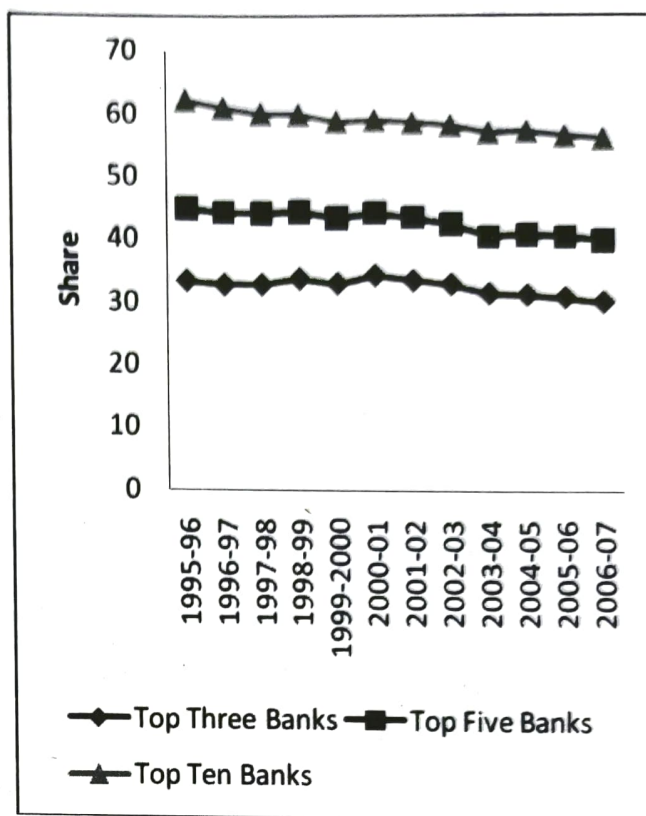
period.

It is significant to note that the concentration declined even after 1999-2000 when the number of operating banks declined. The same trend is also seen from K-concentration ratio measured in terms of Assets (Table 4.1 Annexure, Figure 4.1 ), deposits (Table 4.2, Figure 4.2 ) and, advances (Table 4.3 Annexure ) and Figure (4.3) and income (Table 4.4 Annexure, Figure 4.4

**Figure 4.1 Concentration Ratio of All Commercial Banks Assets (in percent)**



**Figure 4.2 K -Bank Concentration Ratio All Commercial Banks Deposits (in percent)**



**Figure 4.3 K -Bank Concentration Ratio of All Commercial Banks Advances (in percent)**

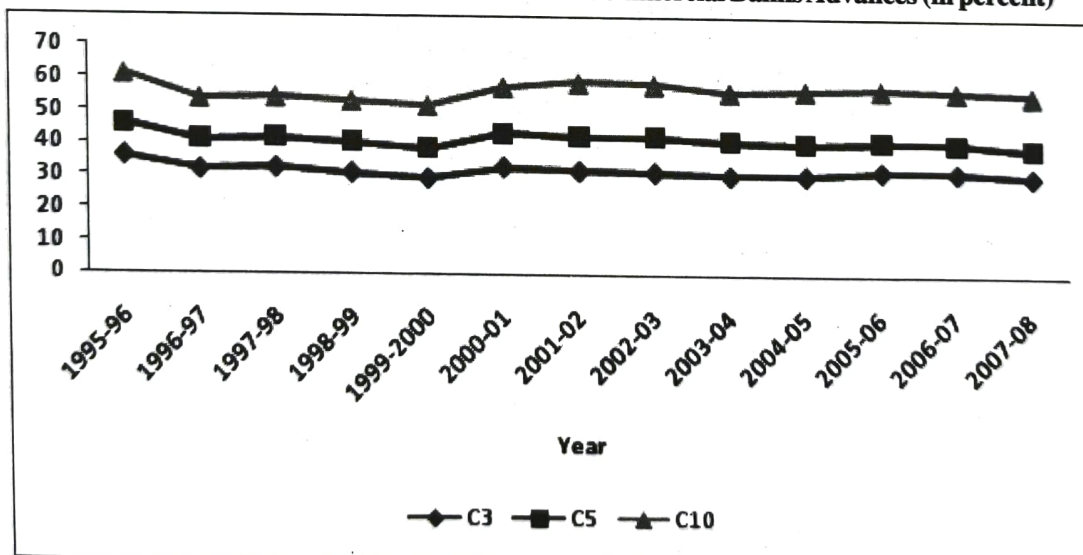
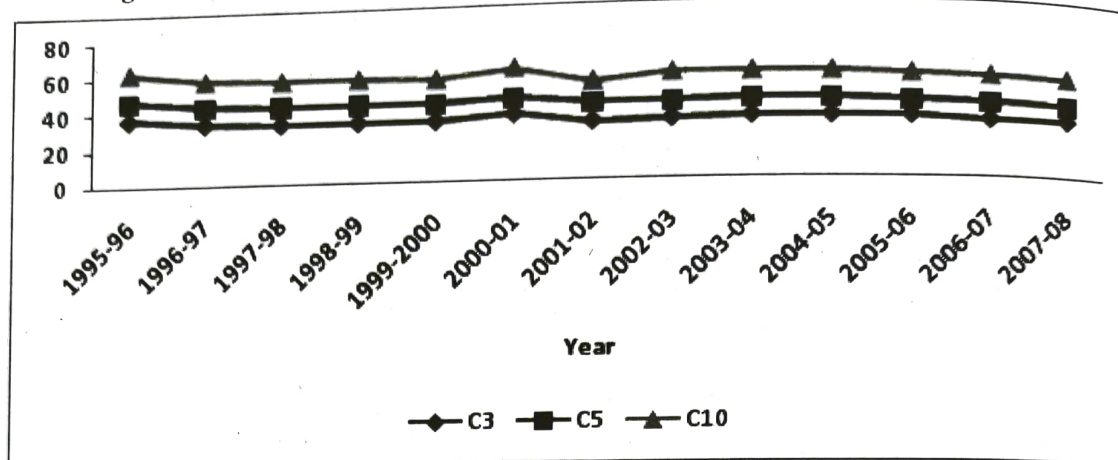


Figure 4.4 K- Bank Concentration Ratio of Income of Commercial Banks (in percent)



### 5.1 Herfindahl Hirschman Index (HHI) for all Scheduled Commercial Banks (Industry)

While the K concentration ratios provide useful information about the market structure, these measures do not take into account the number of banks operating in the banking sector. It does not use the market shares of all the firms in the industry. It does not provide information about the distribution of bank size. For example, if there were a significant change in the market shares among the banks included in the ratio, the value of the concentration does not change if only ranks of banks are seen. As is well known, the number of market participants in the industry has a direct bearing on issues of concentration and competition. Widely used measure of market concentration which overcomes this problem is the Herfindahl Hirschman Index (HHI). The HHI takes into account both the relative size and number of banks in the industry. The HHI uses the market shares of all the firms in the industry, and these market shares are squared to in the calculation to place more weight on larger firms. Unlike the concentration ratio, HHI will change if there is a shift in market share among the larger banks. The HHI assumes the value of 10,000 if there is a single bank in the banking sector (a situation of monopoly), while its value approaches zero when the banking system consists of a large number of banks of relatively equal size.

Table 4.5 reveals that the values of HHI for all the major indicators of the banking sector have decreased after the reforms were initiated. A clear effect of the changes brought by deregulation and liberalisation has been a reduction in the concentration in the Indian banking industry. In totality there has been reduction in concentration measures in case of all the four selected parameters assets, deposits, advances and income. The greatest decline is in case of income from 836.30 to 524.66 that is a decline of 37.2 percent followed by assets from 833.78 to 533.52, a decline of 36.35 percent. In case of advances HHI was 764.48 in 1995-96 and it came down to 546.12 in 2007-08, that is a decline of 2.76 percent per annum and in case of deposits it is 2.50 percent per annum. Over the course of 12 years, income declined greatest at the rate of -

3.81 percent compounded annually followed by total assets (-3.70 percent), advances (-2.76 percent) and deposits (-2.50 percent) respectively. According to SCP approach, the decline implies increased competition among the banks following financial liberalization because of the implementation of various GATS provisions. Although, the reform process did reduced concentration in the industry, the speed of reduction has been noticeably not very large. However, the role of financial liberalization in reducing concentration is clearly established as seen by decline in HHI indices over a period of time, if we take all Scheduled Commercial banks in consideration.

### 5.2 Coefficient of Variation (COV) of All Commercial Banks

Table 4.6(Annexure) shows that the coefficients of variation for deposits, advances, income and assets of the Indian banking sector, have declined in recent years, implying that the dispersion around the mean has decreased over time. Both the decrease in the K concentration ratio and the coefficient of variation jointly suggest that the market structure of the banking sector is improving over time in favour of more dispersal across all the banks taken together.

From the Table 4.6, it follows that total assets of all scheduled commercial banks in India were highly concentrated. This is due to the fact that dispersion of assets across various banks was very low or highly concentrated in few banks. Similar position existed if we take income, deposits or advance, where COV was to the tune of 253.64, 228.36 and 243.85 percent respectively. But over a period of time, it is seen that COV in terms of assets and deposits increased till 2000-01, but then it started going down and during 2007-08, it was 176.00 percent.

In terms of annual growth rate, COV went down by 2.88 percent in case of assets (highest), followed by income, advances and deposits across Indian banks by 2.81, 2.35, 2.26 percent per annum over a period of 1995-96 to 2007-08. But, it is clear from the analysis of coefficient of variation that their still exist large interbank variations across Indian banks.

## 6. Major Findings

- i. Concentration ratio declined in terms of four selected variables such as assets, deposits, advances and income which shows that because of deregulation, liberalization, privatization and globalization, competition increased which led to reduction of concentration ratio.
- ii. Specifically, the asset share of the top five banks has declined from 45.76 percent in 1995 to 37.0 percent by the end of 2008. The asset, loan and deposit shares of the top 10 banks also fell from close to 62% to 52%, a decline of 10%.
- iii. Over the course of 12 years HHI in case of income declined greatest at the rate of -3.81 percent compounded annually followed by total assets (-3.70 percent), advances (-2.76 percent) and deposits (-2.50 percent) respectively. According to SCP approach, the decline implies increased competition among the banks following financial liberalization because of the implementation of various reforms undertaken like deregulation of interest rates, reduction in CRR, SLR etc. Although, the reform process did reduced concentration in the industry, the speed of reduction has been noticeably not very large.
- iv. In the past, it is observed that COV in terms of assets and deposits increased till 2000-01, but then it started going down and during 2007-08, it was 176.00 percent. In terms of annual growth rate, COV went down by 2.88 percent in case of assets (highest), followed by income, advances and deposits across Indian banks by 2.81, 2.35, 2.26 percent per annum over a period of 1995-96 to 2007-08. But, it is clear from the analysis of coefficient of variation that their still exist large interbank variations across Indian banks.

## 7. Conclusion

The Concentration Index on average during the period from 1995-2008-09 was about 42-43%, in case of all the variables like assets, deposits, advances and income for the top five banks in India. Similarly, the Herfindahl Index had declined from 800 to around 530-550 in case of all the variables and in case of coefficient of variation dispersion was very low in the beginning or the concentration of assets was high in favour of few large banks but due to reforms there was decline in concentration around the mean. Summing up it can be inferred that Indian banking market structure is neither perfectly competitive nor monopoly, but lend credence to Monopolistic Competition with signs of oligopoly also as the top banks are holding a significant position. These results seem to be compatible with the contestable markets theory, if it is assumed that the incumbent firms set their prices close to the competitive level because of potential competition. The study examined the degree of competition in the Indian banking system for the period 1995-2007-08. The structure of the banking system

is currently being shaped by the three Cs: competition, convergence, and consolidation. Of these, the increase in competition is widely acknowledged. A simple indicator, i.e., assets of public sector banks as a percent of total commercial banking sector assets, declined from over 90 percent in the beginning of the 1990s to around 70 percent at end-March 2008 — a decline of roughly 1 percent a year over a 18-year span. There is also an increasing convergence in activities as reflected in the overlapping of activities between banks and financial institutions. Consolidation is the need of the hour, as public sector banks need huge capital because of Base II requirements and roadmap for the presence of foreign banks in India. State Bank of India and its Subsidiaries are already under virtual consolidation and physically some formalities are required. In the future there is more scope for consolidation among banks in order to reap the economies of scale.

### Notes :

- (i) For example, the Report on Currency and Finance (1998-99) published by the Reserve Bank of India reports some of these indices and comments on the nature of concentration of export of the Indian economy (pp.IX.6).

### References

- Bain, J.S. (1951). The relation of profit rate to industry concentration: American Manufacturing, 1936-1940. *Quarterly Journal of Economics*, 65(3).
- Baumol, W. J., Panzar J. C., & Willig, R.D. (1982). *Contestable Markets and the Theory of Industry Structure*, San Diego: Harcourt Brace Jovanovich.
- Berger, Demirgüç-Kunt A., Levine R., & Haubrich, J.G. (2004). Bank Concentration and Competition: An Evolution in the Making. *Journal of Money, Credit and Banking*, 36 (2), 433-453.
- Bikker, J.A., & Groeneveld, J.M. (2000). Competition and concentration in the EU banking industry, *Kredit und Kapital*, 33, 62-98.
- Bikker, J.A., & K. Haaf (2002). Competition, concentration and their relationship: an empirical analysis of the banking industry. *Journal of Banking and Finance*, 26, 2191-2214.
- Bikker, J.A., & HAAF, K. (2004). *Competition and Efficiency in a Unified European Banking Market*, Edward Elgar Publishing.
- Claessens, S., & Laeven, . (2004). What drives bank competition? Some international evidence. *Journal of Money, Credit, and Banking*, 36(2), 563-584.
- Bandt, O., & Davis, E.P. (2000). Competition, contestability and market structure in European banking sectors on the eve of EMU. *Journal of Banking and Finance*, 24, 1045-1066
- Young, R., & Hasan, I. (1998). The performance of De Novo commercial banks: a profit efficiency approach. *Journal of Banking and Finance*, 22, 565-587.
- Evanoff, D.D., & Fortier, D.L. (1988). Re-evaluation of the Structure-Conduct-Performance Paradigm in Banking. *Journal of Financial Services Research*, 1, 277-294.
- Goddard, J.A., Molyneux, P., & Wilson, J.O.S. (2001). *European Banking. Efficiency, Technology and Growth*. John Wiley and Sons, England.

Government of India (1991). *Report of the Committee on Financial System (Narasimham Committee I)*

Ministry of Finance. – (1998): *Report of the Committee on Banking Sector Reforms (Narasimham Committee II)*

Kaushik B., & Abhimanyu D. (2003). Dynamics of market structure and competitiveness of the banking sector in India and its impact on output and prices of banking services. *Reserve Bank of India Occasional papers*, 24(3).

Mohan, R. (2004). Financial sector reforms in India: policies and performance analysis. Lecture Delivered at the IMF, Washington D.C.

Northcott, C.A. (2004). Competition in banking: a review of the literature. *Bank of Canada Working Paper No. 24*.

Panzar J. C., & Rosse, J. N. (1987). Testing for monopoly equilibrium. *Journal of Industrial Economics*, 35, 443-456.

Prasad, & Ghosh, S. (2005). Competition in the Indian banking. IMF Working paper No. WP/05/141.

Reddy, Y.V. (2005). *India and the Global Economy*. Address at Lal Bhadur Shastri National Academy of Administration, Mussoorie, Uttaranchal, *RBI Bulletin*, July.

Reserve Bank of India (2004), Master Circular on Branch Licensing. Mumbai: RBI.

—(2005), 'Annual Policy Statement for the year 2005-06', RBI: Mumbai.

—*Report on Trend and Progress of Banking in India, 2007-08*. Mumbai: December.

—*Report on Currency and Finance 2006-08*.

Reserve Bank of India (Various Official Publications).

Rosse, J.N., & J.C. Panzar (1977). Chamberlin v/s Robinson: an empirical study for monopoly rents. *Bell Laboratories Economic Discussion Paper*

**Table 4.1 Movement of Various Measures of Concentration: 1995-2008 of Total Assets**

Year	C3	C5	C10
1995-96	35.33	45.76	61.62
1996-97	34.42	44.9	59.92
1997-98	34.05	44.42	59.03
1998-99	35.26	45.39	59.73
1999-00	33.68	43.39	57.34
2000-01	34.23	43.67	56.89
2001-02	33.98	43.24	58.41
2002-03	33.15	42.39	57.6
2003-04	31.78	41.02	56.08
2004-05	31.52	40.1	55.64
2005-06	31.97	40.81	56.54
2006-07	31.1	39.92	55.3
2007-08	29.2	37.17	52.45
<b>Average</b>	<b>33.05</b>	<b>42.38</b>	<b>57.46</b>

**Table 4.2 Movement of Various Measures of Concentration: 1995-2007 of Deposits**

Years	C3	C5	C10
1995-96	33.28	44.94	62.04
1996-97	32.68	44.31	60.82
1997-98	32.72	44.15	59.92
1998-99	33.66	44.45	59.80
1999-00	32.90	43.48	58.71
2000-01	34.19	44.29	58.96
2001-02	33.38	43.55	58.56
2002-03	32.80	42.46	58.13
2003-04	31.32	40.47	56.91
2004-05	31.12	40.86	57.17
2005-06	30.71	40.45	56.37
2006-07	29.98	39.79	55.93
2007-08	28.56	37.	54.65
<b>Average</b>	<b>32.10</b>	<b>42.38</b>	<b>58.30</b>
<b>Result</b>	The market has remain competitive. The degree of competition has remained stable	The market has become competitive as the share of top five banks is less than 50%	

## Annexure

**Table 1**

### Foreign Financial Institutions (Non-resident) Shareholding in Private Banks in India ( End-March 2007)

NAME of the Bank	Equity Held (percent)
Federal Bank Ltd.	57.2
ING Vysya Bank Ltd.	73.3
Centurion Bank of Punjab Ltd.*	69.9
Development Credit bank Ltd.	64.1
HDFC Bank Ltd.	51.5
ICICI Bank Ltd.	72.0
IndusInd Bank Ltd.	59.3
Yes Bank Ltd.	50.8
*merged with HDFC Bank Ltd with effect from May 23, 2008	

Source: Report on Currency and Finance, 06-08, vol1, pg 124

**Table 4.3 Movement of Various Measures of Concentration: 1995-2008 in case of ADVANCES**

Years	C3	C5	C10
1995-96	35.89	46.00	61.05
1996-97	31.89	41.25	53.70
1997-98	32.56	41.78	54.08
1998-99	31.09	40.54	53.00
1999-00	29.59	38.83	51.55
2000-01	32.99	43.50	57.51
2001-02	31.93	42.46	58.85
2002-03	31.61	42.52	58.45
2003-04	30.72	41.40	56.21
2004-05	30.79	40.91	56.89
2005-06	32.13	41.35	57.23
2006-07	31.88	41.05	56.80
2007-08	30.75	39.66	55.82
<b>Average</b>	<b>31.83</b>	<b>41.64</b>	<b>56.25</b>

**Table 4.4 Movement of Various Measures of Concentration: 1995-2008 in case of Total Income**

Years	C3	C5	C10
1995-96	36.80	47.47	62.59
1996-97	33.58	43.78	57.92
1997-98	32.83	43.30	56.96
1998-99	33.26	43.46	57.22
1999-00	32.50	42.21	56.07
2000-01	36.24	44.73	60.52
2001-02	31.36	40.55	53.28
2002-03	31.72	40.90	57.02
2003-04	32.58	41.81	56.78
2004-05	33.03	41.93	56.81
2005-06	32.97	41.24	56.06
2006-07	31.27	39.75	54.57
2007-08	30.81	39.14	54.12
<b>Average</b>	<b>33.00</b>	<b>42.33</b>	<b>56.92</b>

**Table 4.5 All Scheduled Commercial Banks (HHI)**

Year	No. of banks	Total Assets	Deposits	Advances	Income
1995-96	83	838.77	690.25	764.48	836.30
1996-97	92	789.21	669.04	592.57	715.56
1997-98	100	756.02	656.57	610.21	680.56
1998-99	100	776.90	706.79	578.16	701.22
1999-2000	100	743.21	689.99	546.09	684.59
2000-01	99	779.37	742.27	672.23	676.80
2001-02	98	727.53	720.12	599.40	651.32
2002-03	92	701.67	688.39	596.83	616.57
2003-04	90	640.87	625.24	566.89	645.78
2004-05	88	609.06	624.37	562.32	652.92
2005-06	84	571.18	558.00	571.12	618.45
2006-07	82	540.65	527.01	566.50	533.51
2007-08	83	533.52	509.61	546.12	524.66
<b>CAGR</b> (in percent)		<b>-3.70</b>	<b>-2.50</b>	<b>-2.76</b>	<b>-3.81</b>

**Table 4.6 Interbank variation in All Commercial Banks (COV In percent)**

Year	Assets	Deposits	Advances	Income
1995-96	250.506	228.356	243.853	253.644
1996-97	254.151	231.211	246.337	246.489
1997-98	252.071	231.492	246.483	239.379
1998-99	267.566	244.696	245.047	246.500
1999-2000	256.095	242.702	242.891	244.527
2000-01	259.607	254.707	239.316	238.677
2001-02	244.881	242.967	217.814	229.080
2002-03	233.409	226.185	211.682	220.490
2003-04	218.117	214.860	206.715	211.698
2004-05	206.453	208.768	198.438	211.622
2005-06	197.510	194.620	196.041	206.231
2006-07	186.432	183.391	192.101	185.133
2007-08	176.000	173.634	183.217	180.209