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Bank Market Concentration: A Case Study of India

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Banking sector in India has undergone a deep transformation since 1992 Financial Sector Reforms and witnessed an impressive growth over recent years. The banking industry remains the largest and the most development segment of the Indian financial market. The deregulation of financial services in the Indian Financial Sector, particularly in banking sector and the development of information technology are expected to contribute to dramatic changes in Indian banking markets over the coming years, with vast implications for competition and concentration in the banking and financial sector. Hence, to evaluate the impact of various changes specifically on competition in the banking system, it is important to analyze number of concentration indicators. Particularly, this paper examines the nature and the extent of changes in market concentration of Indian banking sector from year to year basis. Findings herein suggest that the over the time period of study, different concentration ratios has been decreased, reflecting greater degree of competition in India.

JEL Classification: L11, L19, G21, C10.

Keywords: Market Structure, Concentration, Hirschman Herfindahl, Banks, India.

1. Introduction

The banking sector globally has undergone rapid transformation in the recent decades driven by the forces of globalization and the advent of technology. The Indian banking system is no exception, has undergone significant structural transformation since the 1990s. An administered regime under state ownership until the initiation of financial sector reforms in 1992, the sector was opened to greater competition by the entry of new private banks and more liberal entry of foreign banks in line with the recommendations of the Report of the Committee on the Financial System (chaired by M. Narasimham); as the report mentioned that "…freedom of entry into the financial system should be liberalised and the Reserve Bank should now permit the establishment of new banks in the private sector, provided they conform to the minimum start up capital and other requirements and the set of prudential norms with regard to accounting, provisioning and other aspects of operations. (Government of India, 1991, p.72)[i]".

Further, a second Committee on Banking Sector Reforms (also chaired by M. Narasimham) was appointed in 1998 to review the record of implementation of

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financial system reforms and to look ahead and chart the reforms necessary in the years ahead. 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. (Government of India, 1998, Para 1.21)[ii]". During this period, ownership in public sector banks was also diversified along with the flexible entry norms for private and foreign banks; this changed the competitive conditions in the banking industry. The importance of competition was also recognized by the Reserve Bank, when it observed that: "Competition is sought to be fostered by permitting new private sector banks, and more liberal entry of branches of foreign banks….Competition is sought to be fostered in rural and semi-urban areas also by encouraging Local Area Banks. Some diversification of ownership in select public sector banks has helped the process of autonomy and thus some response to competitive pressures. (Reddy, 2000)". And more recently it has been observed that: "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. (Mohan, 2004)[iii]".

Financial sector reforms that have been introduced in a calibrated and well-sequenced manner since the early 1990s resulted in a competitive, healthy and resilient financial system in the Indian banking market. As a result, the banking sector witnessed accelerated growth during in last number of years. Further the faster growth of the banking sector in relation to the real economy pushed up the ratio of the deposits/ GDP ratio from 38.83 per cent in 1991-92 to 44.18 per cent in 1998-99 and further to 77.72 per cent in 2008-09. Bank credit to commercial sector increased from 21.14 per cent in 1991-92 to 22.82 per cent of GDP in 1998-99 and 56.26 per cent in 2005-06.

Hence, to evaluate the impact of various changes (financial liberalization) specifically on competition in the banking sector, it is important to analyze the trend of different concentration measures. Since Market concentration or more specifically, the degree of seller's concentration in the market, is an important element of the market structure (Ferguson et al 1994), which plays a dominant role in determining the behavior of firm in the market Hart et al (1973).

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. Literature Review

Appropriate techniques for measuring market concentration and its effects had developed, initially in the field of industrial economics in the USA, UK and particularly

other developed countries. Curry and George (1983) provide an extensive survey of such research[iv].

Measuring the extent of market concentration in banking is of interest in its own right. The initial study on concentration and competition in banking was done by Alhadeff (1954). In the context of banking, the studies generally examined concentration issues in the context of overall Structure-Conduct-Performance relationship (SCP). SCP suggests that higher concentration leads to higher prices which lead to higher financial returns. It is only since about 1960 that we have seen a growing body of empirical work dealing with market structure and its impact on bank performances. Gilbert (1984) surveyed 56 studies on market structure and competition and find that most of the studies used concentration in local market areas as a relevant measure of the banking market structure. Further a number of studies (Berger and Hannan (1989), Hannan (1992), Neumark and Sharpe (1992), Okeahalam (1998) Prager and Hannan (1998) support the SCP framework. However a number of other empirical studies, for example Shaffer (1989) cast doubt on the SCP findings. There is also theoretical criticism of the SCP. Some of the early critics notably Demsetz (1973) and more recently Berger (1995) argue that larger market shares may be the result of better efficiency and lower costs. Their basic argument is that if higher profits are derived from greater efficiency then the adverse welfare costs which the SCP predicts as the result of higher prices do not arise. Given that the SCP framework is primarily an empirical approach which is often applied without direct reference to theoretical models of competition, the link which may or may not exist between higher prices and higher profitability is considered to be an empirical issue.

However, individually One-bank concentration ratios were reported in Beighley & McCall (1975) and Kaufoman (1966). A two-bank concentration ratio was employed by Ware (1972). However, the three-bank concentration ratio has been the most extensively employed in Beighley, Prescott and McCall, (1975), Bell and Murphy (1969), Edwards (1964), Edwards and Heggestad (1973) Kunreuther (1976) and Phillips (1967). The four-bank ratio, in particular, has been widely used. It has the advantage of ensuring confidentiality of data, and, also, focuses on the importance of "fewness" which is a characteristic feature of certain market structures Kinsella (1981). Kinsella (1981) used the four-bank ratio to underlining the key place of the four Associated Banks in the market structure of banking in Ireland. The analysis of concentration ratios for Irish banking showed that a relatively small number of banks account for the bulk of output. The (adjusted) four-bank concentration ratio which has been extensively used in US studies was 85 per cent in 1977 compared with 84 per cent in 1972. The HHI-Index provided some useful insights into market concentration in Irish banking. The Index summarizes, *inter alia,* the effects on market structure of changes both in the number as well as the size distribution (deviation from average bank size) of all banks. The inverse of the Index gives the number of equal-sized banks equivalent to a particular value for the Index, which enables policy-makers to see at a glance the direction in which market structure is changing. In 1972, the HHI-Index was 0.1904 (equivalent to 5.252 equal-sized banks). By 1977, the Index was 0.1740 (equivalent to 5.746 equalsized banks). There was, however, a decline in relative concentration between 1972 and 1977 and, moreover, this reduction was statistically significant at the 95 per cent confidence level. However, this decline in relative concentration was, in effect, telescoped into the years 1972/1973. The value

of the HHI-Index for Ireland appears to be in line with that for Canada and Australia and higher than that for the few comparable countries for which data are available, e.g., Israel and Belgium. The banking systems of Canada and Australia have developed along the lines of the United Kingdom. All three countries are recognised as having relatively highly concentrated oligopolistic market structures Honohan & Kinsella (1981).

Recently, Bikker and Haaf, 2002 calculated the Herfindahl- Hirschman index and the k bank concentration ratios, for k = 3, 5 and 10, based on market shares in terms of total assets of banks in 20 countries. Differences across countries in the *HHI* relate most heavily to the number of banks, whereas differences in the CR_k are mainly due to the skewness of the bank-size distribution, in particular of its large-bank end. On the whole, apart from a few exceptions, the rankings of countries are rather similar for the various indices considered, which raises confidence in the appropriateness of these indices. Surprisingly, the ranking of the *HHI* and the 3-bank *CR* bear the closest resemblance (with a correlation of 0.98), whereas the ranking of the 5 and 10-bank *CR*s differ more from the *HHI* (with, respectively, correlations of 0.94 and 0.86). The CR_3 and the CR_{10} are least similar. This observation puts into perspective the many ponderous considerations in the literature regarding the neglect of the smaller banks in the k bank CR indices as compared to the HHI, which takes all banks into account.

Further, the outcomes of numerous researches have resulted in the existence of numerous bank concentration theories in the literature. These theories could be classified into pro-concentration and cons concentration theories. Concentration refers to the degree of control of economic activity by large firms (Sathye, 2002). The increase in concentration levels could be due to considerable size enlargement of the dominant firm(s) and/or considerable size reduction of the non-dominant firm(s). Conversely, reduction in concentration levels could be due to considerable size reduction of the dominant firm(s) and/or considerable size enlargement of the non-dominant firm(s) (Athanasoglou et al., 2005).

Proponents of banking sector concentration argue that economies of scale drive bank mergers and acquisitions (increasing concentration), so that increased concentration goes hand-in-hand with efficiency improvements (Demirgüç -Kunt and Levine, 2000). Some theoretical arguments and country comparisons suggest that a less concentrated banking sector with many small banks is more prone to financial crises than a concentrated banking sector with a few large banks. This is partly because reduced concentration in a banking market results in increased competition among banks and vice-versa. Proponents of this "concentration-stability" view argue that larger banks can diversify better so that banking systems characterized by a few large banks will be tend to be less fragile than banking systems with many small banks (Allen and Gale, 2004). Concentrated banking systems may also enhance profits and therefore lower bank fragility. High profits provide a buffer against adverse shocks and increase the franchise value of the bank, reducing incentives for bankers to take excessive risk. Furthermore, a few large banks are easier to monitor than many small banks, so that corporate control of banks will be more effective and the risks of contagion less pronounced in a concentrated banking system (Beck, Demirgüç -Kunt and Levine, 2003).

Cons concentration, there is evidence linking increase in banking concentration to reductions in credit supply. In the United States, Berger et al (1995) find evidence that the increase in the proportion of banking industry assets controlled by the largest banking organizations in the 1990s, due to the liberalization of geographic restrictions on banking in the United States, may have been responsible for part of the credit crunch observed in 1989-92. It has also been argued that the higher the concentration in the local bank market; the higher prices are for financial services, and consequently the higher the banks' profits. This is because banks in less competitive environments charge higher interest rates to firms. If concentration is positively associated with banks having market power, then concentration will increase both the expected rate of return on bank assets and the standard deviation of those returns (Beck, 2007). The policy implication is that higher market concentration is associated with lower socio-economic welfare and, therefore, higher concentration is undesirable. Another cons concentration position is that a more concentrated banking structure enhances bank fragility. Advocates of this "concentration-fragility" view note that larger banks frequently receive subsidies through implicit ''too big to fail'' policies that small banks do not enjoy (Boyd and Runkle, 1993). Proponents of the concentration-fragility view disagree with the proposition that a few large banks are easier to monitor than many small banks. If size is positively correlated with complexity, then large banks may be more opaque than small banks, and therefore more difficult to monitor. This would tend to produce a positive relationship between concentration and fragility. Theoretical results demonstrate that monopolistic market power of banks raises the opportunity costs of capital and thus, tends to make financing more expensive (Smith, et.al 1998). Lack of adequate competition in banking could thus, adversely affect economic development.

Above review of literature gives us the empirical substance to one of the theoretical advantages which is claimed for concentration ratios as a measure of market structure. Hence, the degree of banking market structure matters for competition and performance has been a "hotly debated topic". As Hunter (1971) notes: "the concentration ratio starts from what is basically an analysis of the actual structural characteristics of the industry."

3. Data Base And Methodology

The banking system in India consists of commercial and cooperative banks, of which the former account for around 98 per cent of banking system assets. Based on the ownership pattern, the commercial banks can be in grouped into five types– (i) State Bank of India & its Associates, (ii) Nationalized Banks, (iii) Regional Rural Banks, (iv) foreign banks and (v) Other Scheduled Commercial Banks (in the private sector i.e. old and new private sector banks) [v]. We decided to include in our data set only those banks, which had at least three branches during the entire study period. This was done to remove many small foreign banks, which were operating mainly to service clients of their parent banks abroad and who may be choosing their input and output mix on considerations totally different from all other banks with a significant retail presence in the country and to exclude the regional rural banks, which are also scheduled commercial banks in the state sector from our scope of study. These banks are local banks with their domain of operations restricted to one or two contiguous districts and mostly provide credit to farmers and small enterprises. Since these banks

have been formed to meet some social objectives of providing credit to a specific target group, their inclusion in our data set may lead to misleading results. Based on this criterion, we have selected 75 banks in the year 1998-99 and 61 banks in the terminal year i.e. 2008-09 of our study. Apart from mergers and setting up of new banks, change in number of banks over the years is varied also on account of closure of some banks.

The most significant phase in the evolution of banking was the phase of financial sector reforms that began in 1991-92, which had two sub-phases (1991-92 to 1997-98; and 1998-99 and beyond). The main issues faced in the first sub-phase (1991-92 to 1997-98) were the weak health of the banking sector, low profitability, weak capital base and lack of adequate competition. The reforms in the initial phase (initiated by the Government, the Reserve Bank), thus, focused on strengthening the commercial banking sector by applying prudential norms, providing operational flexibility and functional autonomy and strengthening the supervisory practices. A major achievement of this phase was significant improvement in the profitability of the banking sector. To infuse competition in the banking sector, several measures were initiated such as allowing the entry of private banks into the system. Although several measures were initiated to create competitive environment, competition remained muted. Thus the focus in the second sub-phase (1998-99 and beyond) was on further increasing competition[vi], strengthening of the prudential norms in line with the international best practices, improving credit delivery, strengthening corporate governance practices, promoting financial inclusion, strengthening the urban co-operative banking sector and improving the customer service. Further the East Asian crises in June 1997 also suggested the risks a weak banking system could pose to the real economy. Hence the study period from 1998-99 onwards chosen, in total 11 years analysis has been made from 1998-99 to 2008-09. For the analysis, the data is based on total assets which are collected from various issues of Statistical Tables Relating to Banks in India, an annual publication of the Reserve Bank of India (RBI).

Further for the purpose of study, we have calculated eight types of concentration ratios on the basis of their weighing schemes and structure *(defined by Marfels, 1971a and Dickson, 1981)* for each year separately as Table 1 shows the range and typical features of different concentration ratios. Since the importance of concentration ratios arises from their ability to capture structural features of a market. Concentration ratios are therefore often used in structural models explaining competitive performance in the banking industry as the result of market structure (Bikker & Haaf, 2002).

(Marfels, 1971a) and (Dickson, 1981) classified concentration measures according to weighting schemes and structures. The weighting scheme of an index determines its sensitivity towards changes at the tail-end of the bank size distribution. Marfels differentiates between four groups of weights:[vii]

1. Weights of unity are attached to the shares of an arbitrarily determined number of banks ranked in descending order ($wi = 1, \forall i \leq k$), and zero weights are attached to the remaining banks in the industry ($wi = 0, \forall i > k$). E.g. k bank concentration ratio (CR_k).
2. Banks' market shares are used as their own weights ($wi = si, \forall i$), so that greater weights are attached to larger banks. These indices take account of all banks in the industry. E.g. Herfindahl-Hirschman index (HHI).

3. The rankings of the individual banks are used as weights ($wi = i, \forall i$), where banks can be ranked in ascending or descending order. All banks are included in computing this index. E.g. the Hall-Tideman index[viii].
4. Each market share is weighted by the negative of its logarithm (wi = - log $si, \forall i$). A smaller absolute weight is thus attached to larger market shares. E.g. Entropy index.

Table 1: Features of Concentration Measures

Index Type	*Defined as*	*Range*	*Typical Features*
CR_1	$\mathrm{CR_k} = \sum_{i=1}^{k} s_i$ *	$0 < CR_k$ =1	*Takes only large banks into account; arbitrary cut off.*
CR_3			
CR_5			
CR_{10}			
HHI	$HHI = \sum_{i=1}^{n} s_i^2$	1/n=HHI =1	*Considers all banks; sensitive to entrance of new banks.*
CCI	$CCI = s_i + \sum_{i=2}^{n} s_i^2 \left(1 + (1 - s_i)\right)$	0 < CCI = 1	*Addresses relative dispersion and absolute magnitude; suitable for cartel markets.*
Entropy	$E = -\sum_{i=1}^{n} s_i \log_2 s_i$	0=E= $\log_2 n$	*Based on expected information content of a distribution.*
Gini Index	$Gini = 1 - 2\int_0^1 L(X)d(X)$	0 < G =1	*Account all banks in the market; shows inequality in the distribution.*

Note: * *where s_i is defined as market share of ith bank.in the market.*

In addition to seven measures, the eight measure i.e. Gini Index is also calculated as it is relative measure of inequality. Marfels (1971b)[ix] showed the interrelationships between measures of inequality and measures of concentration when applied to the measurement of industrial concentration. Further he explained that Gini's index of concentration is the reference measure which can be applied both to measure the inequality among firms and in transformation to measure concentration in the market. The Gini Coefficient has been widely used in US study's of bank concentration (Gilbert, 1984) as it measures the extent to which individual bank shares deviate from the *mean* market share, it gives a useful insight into market structure which cannot be inferred from absolute measures of market structure such as the concentration ratio.

With this backdrop of alternate concentration measures, now we are going to present the empirical results of market concentration as applied to Indian banking sector. The application demonstrates the diverging results yielded by the various concentration measures when applied to the same underlying market.

4. Findings

Table 2 presents the trends in various concentration measures during 1998-99 to 2008-09 based on total assets of 75 scheduled commercial banks in the initial period of study active in the market which gradually decrease to 61 banks in the conclusive period of study. Even a brief glance reveals the wide spread in these values. The results show clearly that not only does the range of possible values differ strongly

across the indices, but so do the values of the indices within this range. The share of leading bank i.e. State Bank of India is declined from 23.62 percent in the year 1999-98 to 17.81 percent in 2005-06, sharply rose to 18.59 percent in the conclusive period of study that is 2008-09 due to merger of State Bank of Saurashtra with State Bank of India. Further the five-bank concentration ratio declined substantially from 44.92 per cent in 1998-99 to 40.88 per cent in 2004-05 and further to 39.38 per cent in 2008-09. A similar trend was discernible in the other CR_k concentration of bank assets (Figure 2).

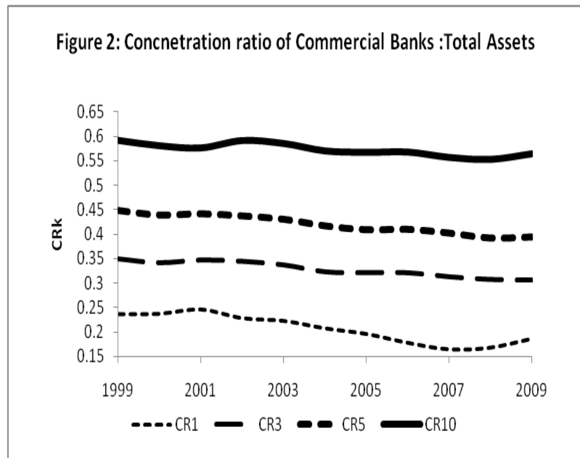
Table 2: Trends in Concentration Ratios of Scheduled Commercial Banks in India#

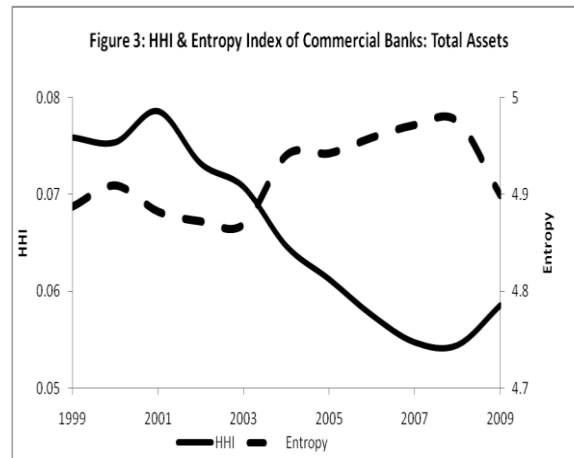
Year	No. of Banks	CR1	CR3	CR5	CR10	HHI	Entropy	CCI	Gini
1998-99^	75	0.2362	0.3489	0.4492	0.5918	0.0759	4.8877	0.2757	0.6581
1999-2000	74	0.2371	0.3411	0.4396	0.5808	0.0754	4.9093	0.2747	0.6461
2000-01	73	0.2456	0.3467	0.4423	0.5762	0.0786	4.8825	0.2816	0.6435
2001-02	72	0.2281	0.3441	0.4378	0.5914	0.0732	4.8725	0.2696	0.6533
2002-03	70	0.2226	0.3369	0.4309	0.5855	0.0708	4.8693	0.2643	0.6489
2003-04	71	0.2074	0.3231	0.4170	0.5702	0.0647	4.9405	0.2498	0.6422
2004-05	70	0.1960	0.3213	0.4088	0.5672	0.0613	4.9423	0.2408	0.6427
2005-06	69	0.1781	0.3211	0.4098	0.5678	0.0576	4.9585	0.2285	0.6385
2006-07	66	0.1647	0.3131	0.4020	0.5568	0.0548	4.9714	0.2184	0.6215
2007-08	63	0.1681	0.3077	0.3916	0.5526	0.0545	4.9753	0.2192	0.6013
2008-09	61	0.1859	0.3065	0.3938	0.5642	0.0586	4.8994	0.2329	0.6088

Notes: # Based on Total Assets size of banks. ^ Year ending 31 March.
Source: Computed from Statistical Tables Relating to Banks in India (RBI), Various Issues

The evidence of growing competitive pressures was also well supported by the declining trend of HHI as it declined from .076 in 1998-99 to .059 in the year 2008-09. Similarly CCI shows that the concentration has been decreased from 28 percent to 23 percent in 2008-09. In contrast to HHI, the entropy index assigns greater weight to smaller banks and vice-versa. The entropy index also corroborated the finding based on HHI (figure 3). Further, Gini Coefficients for Indian banking for 1999 to 2009 are set out in Table 2 above. The Gini index is Gini coefficient expressed as a percentage, and is equal to the Gini coefficient multiplied by 100.The coefficient is, essentially, a measure of the extent to which firms in an industry or, in this case, banks, are unequal in size. A lower value for the coefficient corresponds to a reduction in inequality. It can be seen that, first, the Gini Index is relatively high and, secondly, that it has declined marginally from 65.81 percent in 1998-99 to 60.88 percent in 2009. It means inequality between Indian commercial banks has been decreased in our period of study.

From above analysis, two different patterns are very clear (i) there exits a uniform trend across various measures; (ii) although reform process reduced concentration in the banking industry, the speed of reduction has been noticeably slow. However, over the time period of our study, different concentration ratios have been decreased, reflecting increasing degree of competition in India.





Further, A cross-country analysis in terms of concentration ratios suggests that in several countries, concentration declined between 1991 and 2008, while in some advanced countries (US, Canada, Japan, Singapore, & Spain) and emerging economies (Israel & China), it increased somewhat. The market structure of the Indian banking sector is less skewed when compared with most of the advanced and other emerging market economies (Table 4). The degree of concentration in the Indian banking sector was far lower than that in China, Germany, Spain, Brazil, UK, Singapore and Israel. In fact, the degree of concentration in the Indian banking system, based on 3 bank concentration ratio in 2008, was one among the lowest after Russian Federation.

Table 3: Trends in Banking Concentration Ratio across Countries*

Country	1991	1998	2008
Advanced Economies			
Australia	0.89	0.62	0.61
Canada	0.40	0.55	0.57
France	0.75	0.48	0.55
Germany	0.74	0.63	0.74
Japan	0.43	0.33	0.54
Korea, Rep.	0.58	0.38	0.54
Singapore	0.86	0.81	0.99
Spain	0.75	0.74	0.91
United Kingdom	0.75	0.70	0.72
United States	0.20	0.22	0.35
Emerging Market Economies			
Argentina	0.72	0.32	0.41
Brazil	0.94	0.40	0.83
India	0.46	0.35	0.31
Indonesia	0.83	0.40	0.64
Israel	0.85	0.74	0.97
China	0.62	0.82	0.72
Philippines	0.92	0.67	0.79
Russian Federation	0.99	0.71	0.14
South Africa	0.99	0.72	0.79
Thailand	0.85	0.51	0.50
Turkey	0.83	0.53	0.42

Note: *Based on total assets of three largest banks.
Source: World Bank Policy Research Working Paper No. 4943, May 2009, except data on India, calculated by author.

5. Conclusion

This paper examined the nature and the extent of changes in the market concentration in the Indian banking sector and their possible implications on competitiveness. In contrast to earlier empirical applications on banking, this paper focused on both absolute and relative measures of market concentration. The paper found strong evidence of change in market structure of banking in India. The k bank concentration ratio & HHI are often used as proxies for the market structure in structural approaches to measure competition, *i.e.* the Structure-Conduct-Performance paradigm and the efficiency hypothesis. The empirical results showed that the concentration ratios based on HHI and k bank concentration has decreased from the initial year of study i.e. 1998-99, reflecting a greater degree of banking competition in India. Further the Gini index as a relative measure of concentration has also decreased during the time period of study i.e. from 1998-99 to 2008-09, showing decrease in inequality among commercial banks operating in Indian banking market. However it is also significant to note that the concentration declined, when the operating banks also declined.

Applied in practice, the various concentration measures may show strongly diverging values for the same market, owing to the use of varying weighting schemes, which reflect mainly different assessment regarding the relative impact of larger and smaller banks on competition in a certain market. Policy makers can select suitable concentration indices depending on (i) the features of their banking market (*e.g.* the type or level of concentration), (ii) their perceptions regarding the relative impact larger and smaller banks have on competition in a certain market, and (iii) their perceptions regarding the relative impact of size distribution and number of banks (for instance, reflecting the impact of a new entry). These features and perceptions mainly determine which index is most appropriate. On the basis of detailed work in this area, further research could be focus, inter alia, on the determinants of concentration and application of concentration measures in SCP hypothesis as applied to competitive Indian banking market. Lastly, this study is limited to Indian banking sector, a comparative study can also be done with other emerging markets in South Asian Countries.

End Notes

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[i] Government of India, 1991, *Report of the Committee on the Financial System* (Chairman: Shri M. Narasimham) (New Delhi).
[ii] Government of India, 1998, *Report of the Committee on Banking Sector Reforms* (Chairman: Shri M. Narasimham) (New Delhi).
[iii] Mohan. R., 2004, "Financial Sector Reforms in India: Policies and Performance Analysis," Lecture Delivered at the International Monetary Fund, Washington, DC.
[iv] Curry, B. and K. D. George 1983. Industrial concentration: A survey Journal of Industrial Economics. 31(3): 203-55.
[v]The entire segment is referred to as 'scheduled commercial banks', since they are included in the Second Schedule of the RBI Act, 1934.
[vi] Measures were undertaken to strengthen the competitive environment. With a view to further liberalizing 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 from time to time. The branch authorisation policy was also liberalised and rationalised in

September 2005 in order to give reasonable freedom to banks and rationalise the policy for opening of new branches in India. In consultation with the Government of India, the Reserve Bank released the roadmap for the presence of foreign banks in India on February 28, 2005.
[vii] Instead of Marfel's fourth group of weighting schemes, in which the shares of individual banks are used as weights in a weighted geometric mean, the present paper presents the logarithmic of the market share of the respective bank(e.g. Entropy), (Bikker & Haaf, 2002).
[viii] Hall & Tideman (1967) introduces a new measure called TH –Index which turns out to be superior to all existing measures of concentration. This measure is not chosen since it is shown to be highly correlated with HHI, CRk, hence it is not calculated in the present paper.
[ix]The theoretical details and derivations of a theoretical relationship between the concepts of concentration and inequality had been given by Rosenbluth (1955) & Marfels (1971b).

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