CHAPTER-VII

SUMMARY & CONCLUSIONS

After pursuing the policy of strong regulation of industries till mid eighties, the Indian economy, slowly and steadily, started moving towards a liberalized regime since 1991. Reforms were made to lift the economy to a level of a globally competitive economy especially since 1994-95. With the liberalization and deregulation, concentration level may rise or fall depending upon the interaction between the technical characteristics of the industry and the normal competitive processes and also the specific characteristics of an individual industry. As deregulation changes the strategic choices of incumbents and the new firms, hence the impact of liberalization can be different on different industries. Larger markets can accommodate more firms of efficient size and hence the concentration levels may fall but where deregulation allows the incumbent firms to increase their market dominance, concentration could increase. However, if size of the market is small and competition is intense in the industry leading to lower profit margins, the level of concentration may increase but if deregulation erodes the advantage of incumbency, concentration may decrease.

Concentration has a great impact on the behaviour and market performance of the firms or industries. It affects the decision making and regulation of the concerned industry to a great extent. The concentration, especially in private hands, when at the industry level, is feared because of its monopolistic implications and at the sectoral or more aggregate level, because of the danger it can pose for the democratic procedures, practices and institutions. But if concentration is regulated by the state with a suitable policy framework, it can prove a tool for the rapid industrial and hence economic development of the economy through the large scale economies it can generate. That is why, the question of size of industrial units and concentration of economic power has remained in the forefront of industrial policy in India since independence.

The present study is an industry specific study rather than general examination of the impact of liberalization on industrial concentration and aims at the analysis of impact of liberalization on the pattern of industrial concentration in selected Indian
industries and also to study the relationship of concentration with the performance of the firms in the post-liberalization period.

**OBJECTIVES OF THE STUDY**

Specifically, the objectives of the study are:

1. To measure the industrial concentration in selected industries in India during pre and post liberalization period.
2. To study the change in trends in industrial concentration from pre to post-liberalization.
3. To bring out the relationship of post liberalization industrial concentration with performance of firms in the selected industries.
4. To suggest policy measures for industrial development of the economy in light of industrial concentration.

**HYPOTHESES OF THE STUDY**

In the light of the above mentioned objectives, the study attempted to test the following hypotheses:

1. There has been an increase in the industrial concentration in the post liberalization period.
2. There exists a positive relationship between level of concentration and size of firms.
3. There has been a positive relationship between the level of concentration and growth of firms.
4. There exists a positive relationship between the level of concentration and profitability of firms.
5. There has been a positive relationship between the level of concentration and short term solvency of the firms.
6. There exists a positive relationship between the level of concentration and also long term solvency of the firms.
CHAPTER SCHEME

To meet the objectives, the study was organized in seven chapters, including the present one. The first chapter introduced the topic. The second chapter dealt with the theoretical issues relating to the industrial concentration and its relationship with the performance of the firms and industries. The third chapter reviewed the past studies on various aspects of the concentration, its measurement and relationship between structure and performance. Data base and methodology used in the study have been explained in the fourth chapter. In fifth chapter, the concentration in the selected industries has been measured by using various measures of concentration both for the pre and post-liberalization period and also the trends in concentration in both the periods has been examined. Sixth chapter deals with the analysis of relationship of Industrial concentration with the performance of the firms. The last chapter presents the summary of the study and brings out policy implications of the study.

DATABASE AND METHODOLOGY

The study is aimed at measurement of industrial concentration in eleven major industries in India. Initially, the industrial concentration was measured on the basis of 3769 firms but later on due to some constraints like non-presence of the firms throughout the period, merger or acquisition of the firm, non-availability of the data etc., the study was confined to 678 firms. Both fast growing modern and some agro-based conventional industries have been selected for the study. The selected industries comprise of basic goods industries viz. Cement, Chemicals & Allied, Drugs & Pharmaceuticals, Steel and Paper; Capital goods industries namely Automobiles, Electronics and Electricals; Agro-based Consumer goods industries viz. Textiles, Sugar and Food & Beverages. Those firms have been selected for the study which were operational throughout the study period.

The study is based on firm level secondary data taken from Prowess Database, Centre for Monitoring Indian Economy (CMIE), Economic Intelligent Services. The time period of 17 years i.e. from 1988-89 to 2004-05 has been taken for the study. The period has been divided into two parts i.e. from 1988-89 to 1994-95 to study the concentration in the pre liberalization period and from 1995-96 to 2004-05 to study
the effect of liberalization on industrial concentration in the post liberalization period. The liberalization process started in India in 1991 with India gradually abolishing most of the internal controls by the time the WTO came into force in 1995. Since 1995, WTO induced policy measures to liberalize the external relationships of the country in terms of both trade and investment involved tariff liberalization as well as liberalization of the entry of foreign firms in the domestic market. Therefore, the pre and post-liberalization period has been taken with respect to pre and post-WTO era. Thus the changes in the industrial concentration, if any, after 1995 were with respect to the post liberalization policies.

Different economic and financial variables have been included in the study for the measurement of industrial concentration and to analyze its impact on the performance of the firms. The balance sheet values of total assets and profit & loss values of total sales of all the firms were used as the measure of size of the firms. To measure the growth of the firms, annual average compound growth rates of total assets and total sales were computed. Profit was taken in terms of Profit After Tax as percentage of sales. Quick ratios and current ratios were used as measures of short term solvency of the firms. Solvency ratios and Debt-equity ratios were taken as measures of long term solvency of the firms. The difference in closing size of different variable in pre and post-liberalization period has been used to study the relationship of industrial concentration with the various performance variables.

To empirically test the behaviour of the firms and industries with respect to industrial concentration, some quantitative measures of industrial concentration are suggested. Every index has its own merits and limitations. Therefore in this study, an attempt has been made to measure concentration by applying most of the widely used measures. The measures of concentration used in this study are Four & Eight Firm Concentration Ratios, Herfindahl Index, Normalized Entropy Index, Gini Coefficient and Concentration Coefficient. In order to find out the association between industrial concentration and the performance variables, Chi-Square test was applied, after preparing two-way frequency distribution tables and results were interpreted accordingly.
FINDINGS

Industrial concentration is an important structural characteristic of the industrial sector. It is the degree to which an industry is dominated by a few large firms. Once considered as a symptom of market failure, concentration is seen nowadays as an indicator of superior economic performance. Some industries are more concentrated than others because of technical properties of their production technologies or unique characteristics of their markets. Economies of scale, which allow firms to reduce their costs as they increase their output, favour large-scale production over small-scale production. Thus, industries like automobiles, steel, petroleum etc., for which scale of economies are important and large are expected to be more concentrated than others in which costs do not fall as rapidly as output expands. Similarly, concentration tends to be higher in industries, where huge production-cost savings are generated, as additional units of the original model or design are produced. Industrial concentration is also promoted by barriers to entry, which make it difficult for new firms to displace the established and incumbent firms. Barriers to entry can emerge from so many reasons like facilities given by the government such as patents, copyrights and trademarks, franchises, and licensing requirements. Existing firms may possess other advantages over newcomers, including lower costs and brand goodwill, which make entry more difficult for the new firms. As far as the relationship of concentration and market performance is concerned, the general view of economic theory is that a larger firm enjoying larger share in a concentrated market have higher rate of profitability, larger share in sales, larger share in assets, grow faster, have better short and long term solvency, better research & development capabilities and so on.

To study the effect of liberalization on industrial concentration of selected industries in India, the concentration in the selected industries was measured using various measures of concentration on the basis of total sales and total assets.

On the basis of total sales, measurement of industrial concentration with four firm concentration ratios showed that chemicals & allied, electrical, sugar and textiles industries registered low concentration in the pre and post-liberalization period while drugs & pharmaceuticals industry shifted from low to medium level of concentration in pre to post-liberalization period. Cement, food & beverages and paper industries
observed medium level concentration in both the periods, however, automobiles industry moved from medium to high range of sales concentration in the later period of the study. Electronics and steel industries maintained high level of concentration in both the periods of study. In case of eight firm concentration ratios, chemicals & allied and textiles industries recorded low concentration on the basis of sales, in pre and post-liberalization periods however, electrical industry shifted from low to medium range of concentration in the later period of study. Cement, drugs & pharmaceuticals, food & beverages and sugar industries were in the medium range of concentration in both the periods of study while paper industry shifted to high concentration range in the post-liberalization period.

Coefficient of variation depicted that on the basis of sales, drugs & pharmaceuticals, electrical and sugar industries were in the low range of concentration; automobiles, cement, electronics, paper and textiles industries in the medium range of concentration; and chemicals & allied, food & beverages and steel industries were in the high range of concentration, in the pre as well as post-liberalization periods. The results of Hirschman Herfindahl Index revealed that electrical and textiles industries observed low concentration in both the time periods while drugs & pharmaceuticals and sugar industries jumped from low concentration in the pre-liberalization period to join medium concentration industries in the later period of study. In the post-liberalization period automobiles, cement, chemicals & allied, food & beverages and paper industries were in the medium range of concentration; however, automobiles and chemicals & allied industries joined the high concentration industries in the later years of the study. Electronics and steel industries were in the high concentration range in both the periods.

Measurement of concentration on the basis of total sales for Normalized Entropy Index showed that cement, drugs & pharmaceuticals, electrical, sugar and textiles industries were in the low concentration range in both the time periods. Automobiles, food & beverages and paper industries recorded medium concentration in pre and post-liberalization periods, however, electronics industry joined the group in the later period of study. Chemicals & allied and steel industry maintained high concentration in both the periods. The results of Gini Coefficient revealed that drugs & pharmaceuticals and sugar industries were in the low range of concentration on the
basis of sales, in the initial period; however drugs & pharmaceuticals joined the medium range group in the later period. Chemicals & allied and steel industries remained in the high range of concentration in the pre as well as post-liberalization period while rest of the industries under study maintained medium concentration level in both the periods.

On the basis of sales, coefficient of concentration described that drugs & pharmaceuticals and sugar industries registered low concentration in the pre-liberalization period but drugs & pharmaceuticals shifted to medium concentration in the later period. Automobiles industry jumped from medium concentration in the pre-liberalization period to high concentration in the later period while the level of concentration fell from high to medium range in case of electronics industry in the same period. Chemicals & allied and steel industries maintained the high concentration level in both the period. Rest of the industries remained in the medium range of concentration in pre as well as post-liberalization period.

The analysis of industrial concentration in the selected industries on the basis of total assets supported the results of concentration on the basis of total sales, but with some variations. On the basis of four firm concentration ratios it was found that chemicals & allied, drugs & pharmaceuticals, electrical, food & beverages, sugar and textiles industries were in the low concentration range in the pre-liberalization period however chemicals & allied, drugs & pharmaceuticals and food & beverages industries moved up to join medium range of concentration in the post-liberalization period. Automobiles and cement industries maintained medium concentration in both the periods of the study while electronics and steel maintained the high concentration range in the same periods. Paper industry experienced fall in concentration from high to medium level of concentration in pre to post-liberalization period. The analysis on the basis of eight firm concentration ratios revealed that on the basis of total assets, only food & beverages and textiles industries experienced low concentration before liberalization, however, food & beverages shifted to medium range in the later period. Automobiles, electronics, paper and steel industries maintained the high concentration levels throughout both the study periods while rest of the industries remained in the medium range of concentration.
In case of Coefficient of Variation drugs & pharmaceuticals, electrical and sugar industries witnessed low concentration on the basis of total assets, in pre and post-liberalization period. Cement industry shifted from low to medium range of concentration while food & beverages industry moved from medium to high range of concentration in the later period of the study. High level of concentration was maintained in both the periods by chemicals & allied and steel industries while rest of the four industries remained in the medium range of concentration in pre as well as post-liberalization period. The results of Hirschman Herfindahl Index revealed that on the basis of total assets, electrical, sugar and textiles industries in case of low range of concentration; automobiles, cement and chemicals & allied industries in case of medium range of concentration; electronics, paper and steel industries in case of high range of concentration maintained their respective levels in both the time periods of the study. However, drugs & pharmaceuticals and food & beverages industries witnessed increased level of concentration in the later period as these industries moved from low to medium level of concentration in the post-liberalization period.

On the basis of total assets Normalized Entropy Index observed that drugs & pharmaceuticals, electrical, sugar and textile maintained low concentration level in both the periods while automobiles and steel throughout maintained medium and high level of concentration in the same periods, respectively. Cement and food & beverages industries moved from low to medium level of concentration whereas chemicals & allied shifted from medium to high range of concentration from pre to post-liberalization period. Electronics and paper industries experienced fall in concentration levels as they moved from higher to medium level concentration in the later period.

Measurement of concentration on the basis of total assets revealed that in case of Gini Coefficient only sugar industry maintained low concentration in the pre and post-liberalization period while chemicals & allied and steel industries remained in the high range of concentration in the same periods. Electronics industry experienced a shift from high to medium level of concentration in the later period of the study. Rest of the seven industries maintained medium level concentration in both the periods. The results of industrial concentration on the basis of Coefficient of Concentration were identical with the Gini Coefficient as all industries maintained
their respective levels of concentration in both the period and only electronics industry witnessed a shift from high to medium concentration in the post-liberalization period.

As far as the trends in the industrial concentration in the selected industries are concerned, in case of most of the measures of concentration, there was a decreasing trend of concentration in most of the industries in the pre-liberalization period. In case of concentration on the basis of total sales cement, chemicals & allied, drugs & pharmaceuticals, electrical, electronics, steel and textiles industries showed decreasing trend of concentration in case of most of the measures of concentration while automobiles, food & beverages and paper industries depicted increasing trend of concentration. Sugar was the only industry which registered least variation in the concentration in case of most of the measures and an increasing trend in concentration of sugar industry was seen only in case of Coefficient of Variation and Hirschman Herfindahl Index. In case of post-liberalization period, all the industries experienced increasing trend in concentration in all the measures of concentration except automobiles industry which registered fall in concentration in case of four firm concentration ratios and Coefficient of Variation. Steel and sugar industries also witnessed fall in concentration in case of only Coefficient of Variation and Hirschman Herfindahl Index.

Level of concentration on the basis of total assets decreased in all the industries in case of most of the measures of concentration in pre-liberalization period except in electrical and food & beverages industries where the concentration level registered an increase. But in the post-liberalization period, the maximum number of industries under study experienced rising level of concentration in case of all the measures of concentration except steel and sugar industry which recorded decreasing or constant trend of concentration.

To study the relationship of changing trend of concentration with the performance of the firms and industries two-way frequency distribution tables for different performance variables with respect to levels of concentration were prepared. It was found that for most of the variables maximum number of firms were in the lower range of performance in total as well as in all the different categories of concentration, both in case of Hirschman Herfindahl Index and Normalized Entropy
Index. Also in case of both the indexes, the most of the economic and financial performance variables registered positive and significant relationship with the concentration.

On the basis of Hirschman Herfindahl Index, maximum firms had relatively low increase in size of total assets in the post liberalization period. On the basis of categories of concentration and size of assets, maximum percentage of firms (84.68 %) were in the low concentration-low increase in size category while minimum percentage of firms (5.96 %) were in the low concentration-high increase in size category. Among industries registering high increase in size of total assets in the post liberalization period on the basis of categories of concentration, the maximum number of firms (56 out of 86) belonged to medium concentrated industries. In case of size of total sales and range of concentration, highest proportion of firms (82.55 %) were in the low concentration-low increase in size range whereas minimum proportion of firms (8.94 %) belonged to the low concentration-medium increase in size of total sales. On the basis of categories of concentration, the firms observing high increase in size of total sales, the maximum number of firms (88 out of 127) belonged to medium concentrated industries. The post liberalization trends in growth rates of total assets showed that on the basis of categories of concentration, maximum percentage of firms (80 %) were in the low concentration-lower growth category and the minimum proportion of firms (6.81 %) related to low concentration-high growth range. On the basis of categories of concentration, proportionately maximum percentage of firms (81.98 %) were registered in high concentration-lesser growth range in case of total sales while the lowest percentage of firms (5.41 %) were in high concentration-high growth range. The maximum number of firms recording high growth rates in the post liberalization period were in the medium concentration category both in case of total assets (33 out of 57) and total sales (30 out of 57).

On the basis of frequency distribution of firms under different levels of profitability and categories of concentration, the highest proportion of firms (74.77 %) under high concentration range registered lower profitability in the post-liberalization period whereas lowest proportion of firms (8.11 %) was registered in the high concentration-medium range/increase in profits. Among the firms observing high increase in profits, the relative proportion of the firms on the basis of categories of
concentration was highest (17.12 %) in the high concentration range. The liquidity ratios i.e. quick ratios and current ratios showed that the short term solvency of the firms deteriorated in case of most of the firms (53.69 % in case of quick ratio and 61.21 % in case of current ratio). The minimum percentage of firms showing improvement in the liquidity were in the high concentration-high increase in quick ratio (4.50 %) and low concentration-high increase in current ratio category (11.06 %). The maximum proportion of firms witnessing high increase in liquidity ratios were in the medium concentration category in both the cases. Relatively maximum percentage of firms registered improvement in their long term solvency in case of all the categories of concentration. The solvency ratios observed that on the basis of categories of concentration, proportionately high percentage of firms (54.89 %) were in the low concentration-fall in solvency ratio range signifying improvement in the long term solvency and minimum percentage of firms (16.60 %) were in the low concentration-high increases in solvency ratio range. In case of debt-equity ratios, on the basis of categories of concentration, the maximum percentage of firms (73.87 %) were in the high concentration-fall in debt-equity ratio whereas minimum (14.76 %) were in medium concentration-high increase in debt equity ratio range.

The industry-wise analysis on the basis of Hirschman Herfindahl Index showed that among the low concentrated firms Electricals industry registered relatively higher percentage of its firms vis-à-vis other industries showing maximum improvement in performance in the post-liberalization period in case of compound growth rates of total assets, compound growth rates of total sales, quick ratios, current ratios and debt-equity ratios while sugar industry had relatively higher percentage of its firms registering maximum increase in case of size of total assets, size of total sales and profitability against other low concentrated industries. Textiles industry had maximum percentage of its firms among low concentrated firms observing highest improvement in solvency ratios in the post-liberalization period. Among medium concentrated industries, automobiles industry registered proportionately higher percentages of its firms in size of total assets, size of total sales, compound growth rates of total assets, compound growth rates of total sales and solvency ratios performing better than other industries in the post-liberalization period. The performance of the relatively higher percentage of drugs & pharmaceuticals industry’s firms vis-à-vis other industries was better in case of profitability, liquidity ratios and
debt-equity ratios. In case of high concentrated industries, relatively higher proportion of firms of an industry which performed better as compared to other industries was more in case of electronics industry in the size of total assets, quick ratios and current ratios; in case of paper industry in compound growth rates of total assets, compound growth rates of total sales and solvency ratios; and in case of steel industry in size of total sales, profitability and debt-equity ratios.

The industry-wise analysis on the basis of Hirschman Herfindahl Index also showed that among low concentrated industries, textiles industry had relatively maximum percentage of its firms performing poorer in case of most of the variables vis-à-vis other industries in case of size of total assets, size of total sales, compound growth rates of total assets, compound growth rates of total sales, quick ratios and current ratios while the performance of relatively higher percentage of its firms of electrical and sugar industries was poorer in solvency ratios and debt-equity ratios, respectively, against other low concentrated industries. Among medium concentrated industries, the performance of proportionately higher percentage of firms of chemicals & allied industry in case of compound growth rates of total assets, compound growth rates of total sales, profitability and current ratios; food & beverages industry in case of size of total assets and size of total sales; cement industry in case of quick ratios and debt-equity ratios; and drugs & pharmaceuticals industry in case of solvency ratios, was relatively poor as compared to other industries. In high concentrated industries, the paper industry had relatively maximum percentage of its firms vis-à-vis other industries performing lower in case of size of total assets, size of total sales, profitability, quick ratios, current ratios and debt-equity ratios while steel industry’s maximum firms had relatively lower performance in the post-liberalization period in compound growth rates of total assets and total sales; and electronics industry had comparatively more proportion of its firms performing poor in case of solvency ratios.

On the basis of Normalized Entropy Index, the maximum firms which experienced low increase in size of total assets and total sales were in the low concentration category. In both the cases, maximum percentage of firms (20.90 % of total assets and 34.46 % of total sales) experiencing high increase in size were in the high concentration category while minimum percentage of firms (7.33 % of total assets and 10.62 % of total sales) were in the low concentration category. In case of
compound growth rates of total assets and total sales, the maximum firms (210 of total assets and 208 of total sales) experiencing fall in growth rate in the post-liberalization period belonged to low concentration category while the minimum number of firms (13 of total assets and 8 of total sales) registering high increase in growth rates in the post-liberalization period belonged to high concentration category. Maximum firms (26 each) registering high increase in growth rates were in the medium concentration range. Most of the firms (71.9 %) under study had lower profitability in the post-liberalization period but on the basis of categories of concentration, firms with lower profits were relatively more in the high concentration category (75.71 %). Maximum firms (12.82 %) registering high increase in profits were in the low concentration category while minimum percentage of firms (10.09 %) were in high concentration category.

The liquidity ratios revealed that larger percentage of the firms under study had depleted short term solvency in the post-liberalization period. In case of quick ratios, a little more than fifty percent of the firms in all the categories of concentration experienced fall in the quick ratio. Among firms observing high increase in quick ratios, the maximum firms (39) were in low concentration range and minimum (16) in high concentration range. The maximum firms (187) observing fall in current ratios belonged to low concentration category while the maximum number of firms (50) with high increase in current ratio were in the medium range of concentration. The solvency ratios showed that relatively more firms under study witnessed better long term solvency in the post-liberalization period as 45.43 percent firms observed fall in the solvency ratios. Maximum firms (138) registering fall in solvency ratios were in the low concentration category while minimum number of firms (47) were in high concentration-high increase in solvency ratios category. In case of debt-equity ratios, the maximum percentage of firms (72.88 %) showing fall in the ratios in the post-liberalization period belonged to high concentration category as well as minimum percentage of firms (12.43 %) registering high increase in current ratios were also in the high concentration category.

The industry-wise analysis on the basis of Normalized Entropy Index found that among the low concentrated firms, drugs & pharmaceuticals industry had maximum proportion of its firms performing better than other industries in case of
most of the variables viz. size of total assets, size of total sales, profitability, quick ratios, current ratios and debt-equity ratios in the post-liberalization period whereas electrical industry had maximum percentage of its firms performing better vis-à-vis other industries in case of compound growth rates of total assets and total sales. Textile industry had more of its firms performing better than other industries in case of solvency ratios only. In the medium concentrated industries, it was noticed that automobiles industry had maximum percentage of its firm in comparison to other industries performing better in case of size of total assets, size of total sales, compound growth rates of total assets, compound growth rates total sales and quick ratios while electronics industry in case of profitability, current ratios and debt-equity ratios. Food & beverages witnessed relatively higher proportion of its firms vis-à-vis other industries, registering higher improvement in the long term solvency. In case of highly concentrated industries, chemicals & allied industry observed relatively higher proportion of its firms as compared to other industries performing better in case of size of total assets, size of total sales, compound growth rates of total assets, compound growth rates total sales and quick ratios while steel industry in profitability, current ratios, solvency ratios and debt-equity ratios.

It was further noticed that among the low concentrated industries textiles industry had relatively maximum percentage of its firm vis-à-vis other industries depicting lower performance in case of most of the performance variables under study except long term solvency ratios as the performance of the relatively higher proportion of its firms was poor in solvency ratios in case of drugs & pharmaceuticals industry and in debt-equity ratios in case of sugar industry. Among medium concentrated firms, the performance of the relatively larger proportion of its firms was poor in case of paper industry as against other industries in case of all the performance variables except long term solvency variables. Comparatively larger proportion of firms of cement industry recorded relatively higher solvency ratios in the post-liberalization period whereas of food & beverages industry in case of debt-equity ratios. In case of highly concentrated industries, steel industry had relatively maximum percentage of its firms performing poor vis-à-vis other industries in size of total assets, size of total sales, compound growth rates of total sales, solvency ratios and debt-equity ratios while of chemicals & allied industry in case of compound growth rates of total assets, profitability, quick ratios current ratios.
The results of the Chi-square test to study the relationship between different performance variables and concentration showed that there was a significant relationship between most of the variables under study and concentration. Frequency distribution tables on the basis of Hirschman Herfindahl Index found that calculated Chi-square values were significant in case of all the variables except debt-equity ratios. In case of Normalized Entropy Index the calculated values were significant in case of size of total assets, size of total sales, compound growth rates of total assets, compound growth rates of total sales, current ratios and solvency ratios but insignificant in case of profit, quick ratios and debt-equity ratios. When the Chi-square values for distribution tables on the basis of all the other measures of concentration were calculated for all the performance variables, it was found that there was a significant relationship between level of concentration and all the performance variables under study except debt-equity ratios.

On the basis of the examination of theoretical issues and review of literature the general findings are:

Firstly, the pattern of a few large less concentrated industries and a large number of smaller but highly concentrated industries is not new in Indian economy. No major shift has been seen in the more and less concentrated industries after liberalization and the recent times. The liberalization process in India has not resulted in any major process of de-concentration in the individual industries; rather concentration has increased in general.

Secondly, the Industrial policy has been successful in supporting efficiency in Indian industries but not in curtailing the concentration of economic power. Concentration of economic power and efficiency coexist in India’s highly concentrated industries.

Thirdly, liberalization has structurally increased the concentration of economic power and also the social power of big businesses in India. There is the persistence of the strengthening of the concentration with deregulation facilitating the working of the spontaneous tendencies towards such concentration.
Fourthly, financial sector liberalization has also enhanced rather than reduced the lop-sidedness in financing, with large firms being in a better position to access both domestic and foreign financial markets than their smaller counterparts.

Fifthly, the increased exposure to global competition has contributed to turning the scales in favour of the bigger players because they have greater capacity to survive and succeed in competitive environment because of their sound financial base. Thus, liberalization and the removal of many external trade constraints appear to have created an environment conducive for the expansion of the larger players in India.

Sixthly, the concentration in the Indian industries may even be underestimated firstly because of the phenomenon of the same business group having more than one company in the same industry and secondly, of the major companies in some industries the same are fully owned subsidiaries of Multi National Corporations and both belong to the same industry.

The major study specific findings are summarized as follows:

Firstly, in the pre-liberalization period, there was decrease in the levels of sales concentration in most of the industries under study namely cement, chemicals & allied, drug & pharmaceuticals, electrical, electronics, steel and textiles industries while increase in sales concentration was seen in automobiles, food & beverages, paper and sugar industries. There was a decreasing trend in assets concentration in almost all the industries in the pre-liberalization period except in electrical and food & beverages industries.

Secondly, in the post liberalization period, the sales as well as assets concentration has increased in almost all the industries under study except in case of steel and sugar industries which observed mixed trends in case of different measures of concentration. Thus the hypothesis that there has been an increase in the industrial concentration in the post liberalization period stands accepted.

Thirdly, the level of concentration was relatively higher in case of basic and capital goods industries like automobiles, chemicals & allied, electronics and steel
industries as compared to agro-based consumer goods industries like food & beverages, sugar and textiles.

Fourthly, concentration had a positive and significant effect on the size of the firms with relatively more concentrated industries (especially moderately concentrated industries under study) showing higher increase in size during the post-liberalization period. Therefore, the hypothesis that there has been a positive relationship between level of concentration and size of firms is accepted.

Fifthly, concentration had a positive relationship with the growth of the firms with relatively more concentrated industries (especially moderately concentrated industries under study) showing higher growth during the post-liberalization period. Hence, the hypothesis that there has been a positive relationship between level of concentration and growth of firms is accepted.

Sixthly, concentration had a significant association with the profitability of the firms in case of frequency distribution of firms with respect to Hirschman Herfindahl Index while the association was not seen with respect to Normalised Entropy Index. The relationship was further analysed by applying the chi-square on the two-way frequency distribution tables prepared on the basis of all other measures of concentration under study and the relationship was found to be significant in case of most of the measures. So, the hypothesis that there exists a positive relationship between level of concentration and profitability of firms is also accepted.

Seventhly, liquidity ratios on the basis of majority of the measures of concentration were significantly related to the concentration showing association between levels of concentration with improved short term solvency of the larger firms. The hypothesis that there is a positive relationship between the level of concentration and short term solvency of the firms also stands accepted.

Eighthly, capital structure ratios showed mixed results with reference to concentration as solvency ratios were significantly associated with the concentration which shows that the firms were better capable of meeting their outside liabilities but the results were insignificant in case of debt-equity ratios showing no relation of level of concentration with total liabilities of the firms which included external as well as
internal debts. Thus, the hypothesis that there has been a positive relationship between the level of concentration and long term solvency of the firms.

Ninthly, the basic and capital goods industries namely chemical & allied, steel, automobiles and electronics were not only more concentrated but also relatively higher percentage of their firms performed better vis-à-vis other industries.

Lastly, agro-based consumer goods industries namely food & beverages, sugar and textiles were not only less concentrated but also had relatively higher percentage of their firms performing poor or satisfactory.

On the basis of general as well as specific study related findings, it can be inferred that increase in concentration in the post-liberalization period has favourably affected the size, growth, profitability, liquidity and leverage of the larger firms. It justifies the setting up of industrial parks by the government. Industrial estates in the form of either General Industrial Parks (GIP) or Special Industrial Parks (SIP), which are the derivatives of a concentrated industrial structure, positively influence the socio-economic development and industrialization of the particular region and attract foreign direct investment. On the basis of better performance shown by more concentrated industries under study, it can also be suggested that the industrial competitiveness and efficiency of less concentrated industries like sugar and textiles industries can be improved by making them more concentrated. It will bring stability in the production and hence, prices of the mass consumption goods like sugar. It will provide a fillip to industries like textiles industry which are an important component of India’s exports. Hence, the concentrated industrial structures can enhance the industrial and economic development of the economy by:

- Attracting domestic and foreign investments.
- Generating more employment opportunities;
- Generating skilled manpower resources;
- Promotion of exports;
- Availability and stability in prices of mass consumption goods;
- Independent innovation strategy;
- Proximity to end-use markets;
- Leveraging on raw material sources;
• Adding to and improving social infrastructure in terms of healthcare and education facilities.
• Other technical benefits in the form of economies of scale, information and dimension leading to global competitiveness.

Therefore, it is suggested that a Japanese style industrial management system, where state support for concentrated industrial structures is balanced by regulatory oversight by the government, should be adopted. Even under a liberal economic regime, the necessity of regulation ensures that the government still has an important place in the economic activities and it can achieve its general or specific goals through an effective regulatory framework, provided the government is efficient and continuously reforms its administration and policies. The decisions of the government and the quasi-government bodies determine the quantum and distribution of economic benefits. After liberalization, the government has been actively involved in the processes of private capital acquiring land for big industrial projects, real estate projects, infrastructure projects, mining and exploration rights etc. These are important dimensions of industrial concentration which can go a long way in the rapid industrial and thus, economic development of Indian economy.