CHAPTER-2

ECONOMIC DEVELOPMENT OF STATES OF INDIA

2.0.0. It is the view of this researcher that the relative economic development of a state in comparison with other states is a primary result of and one of the best measures of the competitiveness of/ competitive advantage enjoyed by the economy of a state vis-à-vis its competitors within a large federal country. It is for this reason that the relative economic development of various states in India and the criteria and relevant features for making comparisons between them are being discussed immediately after the theoretical aspects of competitive advantage in this dissertation. However, while doing this because of lack of data all states will and cannot be evaluated. It is for this reason that this researcher proposes to evaluate the economic development of only the major states as defined in Chapter 1 earlier.

2.0.1 In paragraph 1.18.3 it was mentioned that it is finally the net income which a state earns over expenditure and the efficiency of utilising this for investment purposes which determines the growth of the firm/economy of the state and which finally generates higher income i.e. economic growth which generates the feeling of well being that is important. In paragraph 1.18.4 it was stated that the real challenge before countries/ states/ firms is sustaining the competitive advantage once obtained rather than creating it initially for a short period and then loosing it or have overwhelming competitive advantage in a commodity whose prices and market are declining with time. 2.0.2 Without considering the above facts even though a state/ country/ firm may have overwhelming competitive advantage the income of a firm/ state/ country will decline
with time. It is therefore necessary for a state to obtain and sustain competitive advantage in goods and services whose prices and market are not likely to decline with time and which will continue to give rising incomes to shareholders i.e. the people living in the state/ country, in the process generating the feeling of well being, it is necessary that a firm/ state/ country develop economically and diversify from being mainly dependent on the primary sector to becoming predominantly a producer of manufactured goods and services i.e. shift to the secondary and tertiary sectors.

2.0.3 In paragraph 1.18.4 it was also stated that in the experience of this researcher the states with the greatest economic growth not only create value but also create competitive advantage in delivering that value. This they do by operating both efficiently and effectively. There is no point in running a state only efficiently if it does not create sustained competitive advantage. For generating sustained competitive advantage creation of value and economic growth are crucial.

2.1.0 Economic Growth/ Competitiveness and the role of State Governments in Federal polities.

2.1.1 According to the United Nations University (UNU) and the World Institute of Development Economic Research (WIDER) under it, many developing and transition countries have considerable regional variation in average household income, poverty, and in health and educational status. National human development indicators can therefore mislead policy-makers when large regional disparities exist. Therefore they have chosen “Regional disparities in human development” as one of the areas for giving priority in research for the year 2002-03. Their project will investigate the size and determinants of
regional disparities in a representative selection of countries. It will use indicators such as poverty incidence and depth, within-region income inequality, human development, and gender indicators to better understand why some regions fall behind in the development process. This researcher is of the view that a similar position prevails with regard to economic development, economic growth, the investments made in and by a state, exports from a state, competitiveness and competitive advantage of a state and that there is considerable regional variations within countries (and even within large states) particularly in large countries like India with many large states and that national competitiveness and competitive advantage indicators will mislead policy makers on the areas on which to place emphasis for making improvements, in view of the large regional variances/ variations.

2.1.2 In this connection the questions that arise are:

1) What is the meaning of economic competitiveness?

2) Reasons for the importance attached to competitiveness of a state? and

3) The exact role of state governments in large federal polities like the U.S.A., Canada, Australia, Russia, China, Brazil and India in improving the competitive position of the individual states?

2.1.3 Competitiveness has been defined at the start of Chapter 1 in paragraph 1.0.1. However, this researcher has not been able to arrive at a very precise definition of what economic competitiveness means in relation to a state/ province which is not a separate economic entity but forms part of a larger economic entity and the development of whose
economy is mainly controlled by an outside Government which is not mainly concerned with the details within the state but in overall terms for the country as a whole.

2.1.4 A company’s ability to remain competitive depends on the productivity of its workforce, its capital investments, and the efficiency with which it employs material and other inputs. For a state in a federal polity economic competitiveness may similarly mean the capability of the producers within the state to offer products or services of better quality or at lower cost than others operating within the same marketplace (which may not be mainly within the state but could be in other states all over the country).

2.1.5 For a geographic area such as a province or a state, the term economic development/ competitiveness is normally used to mean overall high average income (including per capita income)/productivity (whether of labour/ capital). when one says that Maharashtra/ Gujarat " is economically developed/ has a highly competitive economy" it is taken to mean that the state has a large Net State Domestic Product (NSDP), its people, in general, enjoy a comparatively high per capita income (PCI) and its economy is made up of highly productive firms.

2.1.6 However, this researcher is using the term " is economically developed/ competitiveness/ competitive advantage of a state" to refer to not only its high NSDP and PCI but also its suitability or attractiveness as a location for existing or establishing new businesses (i.e. its ability to attract investment), particularly those where employment appropriate to the education and skill levels of the work- force is provided in significant numbers and exports from the state.
2.1.7 The term competitiveness in this connection will be taken to mean its position vis-à-vis the cost structure of doing business elsewhere. Increased competitiveness of a state, therefore, means increasing the suitability and attractiveness of the state as the location for expanding industries (which increases employment in the process). Since the statistics used for arriving at the conclusions have been taken from diverse sources many of which use different measures and a quantitative comparison may not be possible only a qualitative ranking which gives a fairly correct picture is being attempted.

2.2.0 Other view on the factors / features which can be used for making comparisons of competitiveness/ competitive advantage

2.2.1 Porter (1990) has argued that competitiveness of a state/ country is an industry-specific phenomenon as a country/ state cannot be competitive in all types of industries/services. According to him competitive advantage in a particular industry/ service is the outcome of the presence of certain essential factors. viz. the local availability of technically qualified and specialized labour, excellent infrastructure; existence of a minimum number of sophisticated and demanding local customers; existence of vigorous local competition which forces the industry/ service provider to be always on his toes/extremely efficient; and a network of ancillary and supporting industries such as specialized suppliers and service providers.

2.2.2 The willingness and ability of firms to constantly/be able to innovate. This is best done as mentioned by Porter (1998) is by the local presence of a "geographical cluster" of companies in related business sectors.
2.2.3 Gopinath (2002) has mentioned that the competitiveness of a state is contingent on the competitiveness of the institutions and people that occupy it. According to him a state is successful if the organizations that are based in and operate in that state are successful. He is, therefore, of the view that the notion of competitiveness of a state needs to be carried through to the micro foundations of competitiveness i.e. the individuals and institutions in that state. He does not explicitly mention it but it seems he also is in agreement with Porter’s theory of clusters determining competitiveness.

2.2.4 Examples of the application of this theory of competitiveness being highest in clusters in India are the cluster of financial intermediaries in the Southern part of the island city of Mumbai where we have the headquarters of the Reserve Bank of India, two All India financial institutions, major banks, the two major stock exchanges, large and small financial institutions, non banking financial companies, stock brokers, insurance (The headquarters of the Life Insurance Corporation of India (LIC), till recently the sole life insurance agency in India), housing finance (the headquarters of the Housing Development Finance Corporation (HDFC) the first and after the National Housing Bank still the largest housing finance company in India), etc; Hindi (the official language of the Government of India and the language with the largest number of native speakers in India) films in the suburbs of Mumbai city (commonly known as Bollywood), glass bangles in Ferozabad, brassware in Moradabad and shoes in Agra all in Uttar Pradesh, and software in Bangalore, Hyderabad and Navi Mumbai, etc.

2.2.5 All these clusters consists of related businesses and institutions all of them compete with one another, train and expand the local pool of skilled workers, attract specialized
suppliers, and produce an extensive web of interrelationships which facilitates the rapid exchange and development of ideas. E.g. the depth and diversity of this financial cluster helps make South Mumbai an attractive location for new and growing businesses in the financial area, despite the extremely high cost of office space and the virtual non-availability of residential accommodation in this area making a long commute necessary for most persons working in this area.

2.2.6 For the development of this cluster one must acknowledge the important role of the state in establishing and keeping maintained certain important factors in the city, such as a stable law and order situation, with safety of most persons being there because of a stable police force and Government with reasonably predictable policies, a reasonably stable tax environment an efficient port, an efficient transport system (the Brihanmumbai Electric Supply and Transport (BEST) is literally the best urban transport system in India) all of which make it an attractive climate for investment.

2.3.0 Why Economic Growth/Competitiveness happens and its results.

2.3.1 This question has to be examined from two viewpoints. The first is historical, as to what gave rise to the high economic growth/competitiveness and the prosperity of certain states/regions such as Maharashtra or the island city/southern part of Mumbai. The second is the present day competitiveness of these states/areas. Historically such areas had high economic growth/competitiveness because of the availability of excellent infrastructure and markets, strategic location either next to the available raw materials or next to the port (including now airports) from where the finished goods could be exported, etc. These were mainly in either the coastal areas where natural deepwater
harbours were available. In India's case this also included coastal and interior cities which the British rulers had established as the national or provincial capitals or where qualified artisans were easily available at reasonable rates of wages due to historical and other reasons.

2.3.2 The historical reasons as to why Mumbai/ Maharashtra attained competitive advantage over other Indian cities/ states were many. This had mainly to do with the fact that it was the only deep water port in the area for a very long time (now Kandla in Gujarat, Jawaharlal Nehru Port in Navi Mumbai and others have developed as competitors).

2.3.3 The existence of excellent infrastructure viz. the provision of uninterrupted and high quality power by the Tata Electric Companies through the BEST, existence of an excellent bus and local train system (even though it is extremely overcrowded) in a concentrated manner in a limited area and facilities such as high quality schools, colleges and Engineering and technical institutions producing a large number of trained manpower, the existence of world class reasonably priced (when compared with American prices) hospitals, etc. all added to this. It is said of Mumbai city that virtually anyone with even little education can get a job/ start a business and make money but may not be able to get living accommodation at reasonable rates and therefore almost 45 percent of the residents of the city live in slums.

2.3.4 Manufacturing such as in the textile trade where the city had an overwhelming competitive position till the 1970s (it is now virtually dead) added to this competitive
advantage by providing a large number of highly paid jobs has had to change and go to value added areas such as gems and jewellery, light engineering, electronics.

2.3.5 The latest burst of economic growth in the city and the State of Maharashtra was in the service (office, tourism, etc.) and software sector with the largest number of Dotcom companies in India being registered in the city followed by Bangalore and Hyderabad. To this has been added the high tech boom created by the Mumbai-Pune Electronic Corridor with four large Software Technology Parks (STPs) being set up in Navi Mumbai and three STPs near Pune with high speed data connectivity, construction of a high speed expressway in a record time between the two cities making it the single biggest project being set up for this purpose in the country. However, with the recent scams in the stock market, the collapse of the dotcom boom has led many to predict the loss of Mumbai city/Maharashtra's overwhelming competitiveness.

2.3.6 Today's situation is that the Government of Maharashtra has woken up (albeit a bit late) to the loss of attractiveness in its policies and has reversed its earlier policy of not permitting setting up of new offices in Mumbai, is trying to continue to attract new investment and keep existing investment in the state by providing world class infrastructure not only in Mumbai but also outside such as in Pune, Aurangabad, Nashik, etc.

2.3.7 Virtually all products made and services (including in the high value added and high tech sectors) offered by businesses in Mumbai/Maharashtra to out of state/overseas customers and many products and services sold within the state face stiff competition from businesses in other states and from imports/overseas businesses. In fact, other states by offering equally good if not better infrastructure, free land and tax benefits
(this latter has now stopped because of an agreement between the states at the behest of the Union Finance Minister not to compete on sales tax and other fiscal incentives) have been able to some extent to take away businesses (witness the moving away of the Ford India plant to Tamil Nadu) and international educational institutions (witness the moving away of the Indian School of Business to Andhra Pradesh) from the state.

2.3.8 Substantial software development operations started in Bangalore, because the costs and difficulties in doing business in the most attractive place in India for this purpose viz. the city of Mumbai were too high and Bangalore was also able to provide highly qualified manpower at reasonable rates. What is apparent is that Mumbai/ Maharashtra has no more of a permanent edge in high tech services/ advanced technology than it had in manufacturing till the 1970s.

2.3.9 Despite the serious financial constraints facing nearly all state governments in India, encouraging new investment both local and from abroad promotion of new businesses to get high paying jobs has remained a priority for all of them in the last thirty years. During this period Maharashtra lost valuable time by its policy of not permitting industry to set up in the so called advanced/ developed areas of the Mumbai-Thane-Pune-Nashik belt and forcing/ encouraging them to go to the backward areas such as Konkan, Marathwada and Vidarbha which were a long distance from their markets (even though the Maharashtra Industrial Development Corporation (MIDC) did provide very good infrastructure) and were not able to achieve the synergies achieved in the Mumbai-Thane-Pune-Nashik belt.
2.3.10 During this period Gujarat, Karnataka, Tamil Nadu and now Andhra Pradesh have managed to take away a large part of the new businesses which would have in the normal course come to Maharashtra. With the opening up of the Indian economy and the lifting up of the quantitative restrictions on imports in force for over 50 years firms in these areas are being exposed to competition from abroad. This competition like in the Chinese coastal provinces is maximum in the coastal states such as Maharashtra, Gujarat and Tamil Nadu. Far from ruining all businesses in these areas it has led to the states in the West and South being spurred to change over from being mainly dependant on the primary sector to switch over to the secondary and increasingly the tertiary sector, to perform better, have the highest growth in NSDP and PCI. Furthermore with liberalization Indian states themselves are competing vigorously for attracting growing, high wage businesses and services. These changes have far reaching implications for workers, firms, the State and Central Governments in India.

2.4.0 The Role of State Government in economic growth and increasing competitiveness.

2.4.1 The role of the state and local governments in a federal economy such as India’s in increasing the state’s economic growth/ competitiveness can easily be under or overestimated. According to Porter (1998) competitiveness is primarily a private sector phenomenon, but as is seen from the discussion in the first chapter the government does have a clear and crucial role to play as one of the four key partners in the Diamond.

2.4.2 However, it must be clearly stated that the main responsibility for business competitiveness in a state lies with the businesses already established there. It is the
owners/managers who must take the decisions regarding new investment, location, development of new products, new marketing methods, and creation of new employment all of which add up to the creation of successful enterprises and, ultimately, growth in the economy of the state.

2.4.3 Further no company can implement innovative business methods, reach new levels of competitiveness, or achieve significant growth without the enthusiastic support of their employees. So labour peace and the productivity that this is able to achieve is absolutely essential.

2.4.4 The existence of a significant number of institutions of higher learning and research producing qualified technical and managerial manpower in significant numbers plays a vital role in fairly advanced and innovation based economies, like that of Maharashtra.

2.4.5 A State Government may not be able to dictate private sector economic decisions to create a more competitive economy but it has a substantial influence on the climate in which private decisions are made to invest, to modernize, to expand, to train workers, to create new companies, to commercialize new products, and to export.

2.4.6 According to Porter (1990) the primary roles of government in promoting competitiveness are improving the business environment and encouraging innovation. To these this researcher will add four more factors viz. a comparatively better local administration/less prevalence of corruption as compared to other Indian States and a fast and reliable transportation and communications systems, a supply of skilled workers and training available to provide needed skills and accessible investment capital and credit (available comparatively easily in India’s financial capital viz. the city of Mumbai.
2.5.0 Criteria which have been used to determine competitiveness of countries/nations/states.

2.5.1 The World Economic Forum (WEF) and the Harvard Centre for International Development (HCID)(2001) have used the following systems under which it has various criteria for judging the competitiveness of the USA and other countries:

I) Notable Competitive Advantages

(A) Growth Competitiveness

(i) Innovation

(a) Technological sophistication;

(b) Firm level innovation;

(c) Utility patents in the previous year;

(d) Tertiary enrollment;

(e) Company spending on Research and Development;

(f) University/Industry research collaboration.

(ii) Information and Communication Technology (ICT)

(a) Internet Hosts;

(b) Quality of competition in the ISP sector;

(c) Legal framework for ICT development;

(d) Laws relating to ICT use;

(e) Telephone lines;

(f) Internet access in schools.

(iii) Law and Contracts
(a) Property rights.

(B) Current Competitiveness;

(i) Sophistication of company operations and strategy;
   (a) Extent of incentive compensation;
   (b) Value chain presence;
   (c) Control of international distribution;

(ii) Quality of the business environment
   (a) Local supplier quantity;
   (b) State of cluster development;
   (c) Local availability of process machinery.

(C) Other Indicators

(i) Technology
   (a) Quality of scientific research institutions;
   (b) Brain drain;
   (e) Firm level technology absorption;
   (d) Speed and cost of internet access;
   (e) High skilled IT job market;
   (f) Quality of competition in the telecommunication sector;
   (g) IT training and education.

(ii) Infrastructure
   (a) Quality of competition in the transportation sector;

(iii) Public institutions
(a) Intellectual property protection;
(b) Minimum wage enforcement;
(c) Administrative burden for startups.

(iv) Macroeconomic environment
(a) Financial market sophistication;
(b) Venture capital availability;
(c) Permits to export;
(d) Value added tax rate.

II) Notable Competitive Disadvantages

(A) Growth Competitiveness

(i) Information and Communication Technology (ICT)
(a) Cellular telephones;
(b) Government prioritization of ICT;
(c) Government success in ICT promotion.

(ii) Law and Contracts
(a) Organised crime;
(b) Favouritism in decisions of Government officials.

(iii) Macroeconomic environment
(a) National savings rate;
(b) Real exchange rate;
(c) Recession expectations;
(d) Access to credit;
(e) Inflation.

(B) Current Competitiveness;

(i) Sophistication of company operations and strategy;

(a) Extent of regional sales;

(b) Production process sophistication;

(c) Extent of staff training;

(ii) Quality of the business environment

(a) Quality of public schools;

(b) Hidden trade barriers;

(c) Stringency of environment regulations.

(C) Other Indicators

(i) Technology

(a) Minorities in the economy;

(ii) Infrastructure

(a) Difference in quality of schools;

(b) Difference in quality of healthcare.

(iii) Public institutions

(a) Competence of public officials;

(iv) Macroeconomic environment

(a) Exchange rate and exports;

(b) Investment rate;

(c) Corporate income tax rate;
(d) Sources of investment finance;
(e) Expected exchange rate volatility;
(f) Access to bond market;
(g) Exchange rate premium.

(v) Company practices

(a) Union contribution to productivity.

2.5.2. According to Cornelius (2001), every year from 1999 there is a new focus in the Global Competitiveness Report. It started to focus on growth competitiveness, current competitiveness and economic creativity among other things. The first measures the factors that contribute to the future growth of an economy. These factors explain why one country is growing faster than others. India ranks 44th on this. Japan ranked only 21st; although it had a high level of current income there was sluggish economic growth.

2.5.3. The current competitiveness index identifies factors that underpin high current productivity (and hence current economic performance) measured by the GDP per person. Finland tops the list followed by the USA, Germany, the Netherlands and Switzerland. Singapore is ninth, Australia 10th and Japan 14th.

2.5.4. The third index on which the report focuses is - economic creativity – where an important factor is openness of the economy, is critical.

2.5.5 Saeki (2001), says that the Global Competitiveness Report is correct to focus on openness as it is an important criterion for determining competitiveness and economic development. However, while agreeing with the general thrust of the report and its components, he questions the rankings and comparisons between large and small
countries. He says that there is a tremendous imbalance between regions as far as population and economies are concerned and factors vital to one would be insignificant to another. This is important in the Indian context where there is tremendous imbalance between states (and even regions within a state).

2.5.6. In the transitions in economic development part of the executive summary “Competitiveness and stages of economic development” of the Final Global Competitiveness report issued by the WEF 2000-01 emphasis has been placed on an important theme confronting many nations. According to this report countries face very different challenges and priorities as they move from resource based to knowledge based economies. As an economy develops so do its structural bases of global competitiveness. At low levels of development, economic growth is determined primarily by the mobilization of primary factors of production: land, primary commodities and unskilled labour. As economies move from low to middle income status global competitiveness becomes income driven, as economic growth is increasingly achieved by harnessing global technologies to local production. Further foreign direct investment (FDI), joint ventures and outsourcing help to integrate the national economy into international production systems thereby facilitating the improvement of technologies and the inflows of foreign capital and technology that support economic growth.

2.5.7. Sachs (2001) has given details how the WEF and the HCID have calculated the rankings for 75 countries while preparing the Global Competitiveness Report 2001.

2.5.8. He has mentioned that for the purposes of this report competitiveness has been defined as a country’s capacity to achieve sustained economic growth in the medium
term. i.e. five years time. According to him since countries compete for internationally mobile capital the more one country reaps in FDI the less investment another country can attract (in the context of Indian states since the amount of FDI into India is a limited amount this means that the more one state/ group of states reap in FDI the less investment another state/ group of states can attract).

2.5.9. For the 2001 rankings the HCID has determined a country’s competitiveness (i.e. its capacity to grow) according to three broad criteria. viz.

(a) Technology;

(b) Public Institutions; and

(c) macroeconomic stability.

2.5.10. Indices were created in each of these three broad categories and then averaged in a specific manner to create an overall Growth Competitiveness Index (GCI).

2.5.11. According to Sachs(2001) technology refers to the ability of the country to spur new inventions and to adopt technologies in other countries. These are the innovators.

2.5.12. Public institutions refer to the quality of governance, i.e. is there widespread corruption (in the case of Indian states the perception of corruption is more in some states than in others), are courts honest and impartial in their judgements, can governments be trusted to follow through on their commitments. According to him countries with well functioning public institutions achieve higher rates of economic growth than do countries plagued by corruption and rotten judges. High ethical standards promote better economic performance.
2.5.13. Macroeconomic stability refers to the absence of inflation, a balanced budget, a realistic value for the exchange rate, the ability of businesses and Governments to obtain market loans and high confidence that government financial obligations will be honoured.

2.5.14. HCID while evaluating the GCI has divided the world economy into two groups of countries, viz. the innovators which have a university system which is excellent, government laboratories are world class and government and industry invest heavily in research and development. According to this a key determinant for future growth is the proportion of students that go on to higher education after high school graduation.

2.5.15. The International Institute of Management Development (IMD) (2001) uses the following input factors for determining the competitiveness of countries while framing their World Competitiveness Yearbook (WCY) (2001) every year.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Group of input factors</th>
<th>No. of criteria</th>
<th>Description of the criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Government Efficiency</td>
<td>84</td>
<td>Extent to which government policies are conducive to competitiveness.</td>
</tr>
<tr>
<td>3.</td>
<td>Business Efficiency</td>
<td>60</td>
<td>Extent to which enterprises are performing in an innovative, profitable and responsible manner.</td>
</tr>
<tr>
<td>4.</td>
<td>Infrastructure</td>
<td>74</td>
<td>Extent to which basic, technological, scientific and human resources meet the needs of business.</td>
</tr>
</tbody>
</table>

Source: The International Institute of Management Development (IMD) (2001), *World Competitiveness Yearbook*

2.5.16. The IMD then computes competitiveness rankings after computing the standardized (STD) value for each country for all the criteria using the data available for all of the countries. Thereafter ranking is done on the basis of the 224 criteria that are used, 118 Hard and 106 Survey data (according to them in most cases, a higher value is better, e.g., the GDP; therefore, the country with the highest standardized value is ranked first while the one with the lowest is last. However, with some criteria, the lowest value is
the most competitive, which is the case for consumer price inflation. In these cases, a reverse ranking is used: the country with the highest standardized value is ranked last, and the one with the lowest standardized value is ranked first).

2.5.17. The IMD uses the scores to compute the Overall Scoreboard, and the Input Factor, Sub-Factor and Location Attractiveness rankings.

2.5.18. For 2001 the IMD WCY ranks and analyzes the ability of nations to provide an environment in which enterprises can compete (called the "competitiveness of enterprises") and a national environment which covers the four groups of input factors mentioned in paragraph 2.5.5. According to IMD criteria can be hard data, which analyse competitiveness as it can be measured (e.g. GDP) or soft data, which analyse competitiveness as it can be perceived (e.g. Availability of competent managers). In addition, some criteria are for background information only, which means that they are not used in calculating the overall competitiveness ranking (e.g. Population under 15). Giving the same weight to each of the sub factors the overall ranking is calculated.

2.5.19. In the United Kingdom also on behalf of the Government Brown (2001) has devised a UK Competitiveness Index. This index was developed with government backing through the Economic and Social Research Council by Robert Huggins, a former regional policy academic. It measures factors including gross domestic product, productivity, economic activity and the spread of knowledge-based industries.

2.5.20 Gopinath (2002) has mentioned the criteria used by the Beacon Hill Institute (an affiliate of the Suffolk University, Boston, Massachusetts, U.S.A.). According to him the report views competitiveness in terms of the policies and conditions that sustain a high
level of per capita income and its continued growth. To do this the state must be able to attract and sustain businesses. The Beacon Hill study looked at nine broad categories of the business environment in a state. These were:

(1) Government and fiscal policy (i.e. tax rates and the financial discipline of the state);
(2) Institutions and security (i.e. regulatory burden, a legal system sympathetic to business and crime rates);
(3) Infrastructure (i.e. ease of commuting, housing costs, etc.);
(4) Human resources (i.e. availability and costs of a skilled labour force, commitment to education and training);
(5) Technology (i.e. research funding, proportion of technically qualified in the labour force);
(6) Finance (i.e. mobilizing investment);
(7) Openness (i.e. how connected the firms in the state are with the rest of the world);
(8) Domestic competition (i.e. business formation and exit rates); and
(9) Environmental policy (i.e. nature of environmental problems and the extent of regulation).

2.5.21 To measure these nine groups, 38 objective indicators were identified. The ‘state’s competitiveness index’ was then calculated. A secondary index called ‘the state’s competitiveness opinion index’ was also calculated based on a survey of opinion leaders in the eight states forming part of the survey. However, here also there were major differences with regard to the position of an individual state. E.g. on the ‘state’s competitiveness index’, even though it was based on objective indicators Massachusetts
was ranked second. However, on the ‘state’s competitiveness opinion index’ Massachusetts was ranked seventh out of eight states. Even in some of the indicators where it was weak such as infrastructure the opinion was that it was good.

2.5.22 However, he is of the view that while it is interesting to look at state ranks in relation to each other, still it is not one major dam or steel mill that gives the competitive advantage to the state. It is the hundreds of little things that a state needs to do to remain competitive which determine its relative position vis-à-vis others. This is one of the reasons why it may not be possible to quantitatively determine the exact competitiveness of a state in the case of Indian states. Still this researcher will at least try to qualitatively arrive at a picture of the areas/ states with greater competitiveness vis-à-vis other Indian regions/ states.

2.6.0 Nair, Anil Kumar and Sunny(1994) have as part of the data bank for the Research Division of the National Productivity Council (NPC) compiled a Competitiveness Ranking of Indian States. In their earlier studies (Productivity 33(2) and 33(3)) they had reported the ranking of Indian states in terms of Human Development Index (HDI) and Infrastructure Development Index (IDI). In the present study, they combine all the variables included in the HDI and IDI along with some other crucial state variables for arriving at a more comprehensive State level Competitiveness Index (SCI). They have used this to rank 15 major states in India.

2.6.1 According to them some of the crucial variables relevant at the international level become irrelevant at the national level because the states in India (and according to this researcher in other large federal countries also) are not separate entities on their own but
only an integral part of the whole nation. They have identified eleven variables for estimating the overall competitiveness of each of the states. These variables are:

1. Transport infrastructure (Road, Rail and waterways);
2. Telephone availability;
3. Installed electricity generation capacity;
4. Distribution of commercial banks;
5. Life expectancy;
6. Literacy rate;
7. Population below poverty line;
8. Size of the market (consumption + savings);
9. Labour climate (mandays lost);
10. Political stability; and
11. Taxes levied by the state governments.

2.6.2 Among these 11 variables the last three and No. 7 contribute in a negative manner to the overall competitiveness of the state.

2.7.0 Computing Relative Standings in each Component of competitiveness

2.7.1 Jenster and Rubin (1999) have given examples of Competitive category variables in the Appendix to this Chapter that are being reproduced in Illustration 2.1.

<table>
<thead>
<tr>
<th>Variable No.</th>
<th>Weight</th>
<th>Variable name and description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.12</td>
<td>-2</td>
<td>Energy consumption- Kilojoules per constant US$ of GDP, 1988</td>
</tr>
<tr>
<td>5.32</td>
<td>2</td>
<td>*Telecommunications infrastructure- Extent to which telecommunications meet the requirements of companies competing internationally; 0= inadequate, 100= adequate.</td>
</tr>
<tr>
<td>No.</td>
<td>Variable number</td>
<td>Weight</td>
</tr>
<tr>
<td>-----</td>
<td>----------------</td>
<td>--------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.12</td>
<td>-2</td>
<td></td>
</tr>
<tr>
<td>5.17</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5.18</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable number</th>
<th>5.12</th>
<th>5.17</th>
<th>5.18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country A</td>
<td>1.32</td>
<td>-0.18</td>
<td>0.53</td>
</tr>
<tr>
<td>Country B</td>
<td>-1.10</td>
<td>1.30</td>
<td>-1.40</td>
</tr>
<tr>
<td>Country C</td>
<td>-0.22</td>
<td>-1.12</td>
<td>0.87</td>
</tr>
</tbody>
</table>

* denotes a survey question. Source: from the World Competitiveness Report (published every year by the International Institute of Management Development, Lausanne, Switzerland (IMD)

2.7.2 They have shown Competitive category calculations in Table 9.3 of the Chapter that are being reproduced in Exhibit 2.2.

Exhibit 2.2

COMPETITIVE CATEGORY CALCULATIONS

<table>
<thead>
<tr>
<th>No.</th>
<th>Variable number</th>
<th>Weight</th>
<th>Definition</th>
<th>Raw data</th>
<th>Transformed data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Country A</td>
<td>Country B</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>5.12</td>
<td>-2</td>
<td></td>
<td>Kilojoules commercial energy per USS of GDP, 1988</td>
<td>5641</td>
<td>4130</td>
</tr>
<tr>
<td>5.17</td>
<td>4</td>
<td></td>
<td>Per capita trade balance in non-energy raw materials, USS, 1988</td>
<td>2.8</td>
<td>13.8</td>
</tr>
<tr>
<td>5.18</td>
<td>1</td>
<td></td>
<td>*Adequacy of domestic natural resources; 0 = low, 100 = high</td>
<td>81.87</td>
<td>74.96</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable number</th>
<th>5.12</th>
<th>5.17</th>
<th>5.18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country A</td>
<td>1.32</td>
<td>-0.18</td>
<td>0.53</td>
</tr>
<tr>
<td>Country B</td>
<td>-1.10</td>
<td>1.30</td>
<td>-1.40</td>
</tr>
<tr>
<td>Country C</td>
<td>-0.22</td>
<td>-1.12</td>
<td>0.87</td>
</tr>
</tbody>
</table>

* denotes a survey question. Source: from the World Competitiveness Report (published every year by the International Institute of Management Development, Lausanne, Switzerland (IMD)

2.7.3 According to them raw data is transformed to comparable data by subtracting the sample mean and dividing the resulting quantity by the sample standard deviation. This transformation gives the number of standard deviations a nations score is above or below the sample mean, providing a consistent and unit less method of comparison across nations.

2.7.4 Prof. Per Jenster in his E-mail of February 14,2001 to this researcher has stated that the critical issue is the weighting of the variables, and for this the methodology used was
simple, robust, yet not very sophisticated. They gave a rating from 1 to 3 of the strategically importance of each variable related to national competitiveness.

2.8.0 The United Nations Development Programme (UNDP)(2001) have compiled a Human Development Index (HDI), which is a summary measure of human development for comparing countries. It measures the average achievements in a country in three basic dimensions of human development viz.

- A long and healthy life, as measured by life expectancy at birth.
- Knowledge, as measured by the adult literacy rate (with a weight of two-thirds) and the combined primary, secondary and tertiary gross enrollment ratio (with one-third weight).
- A decent standard of living, as measured by the GDP per capita (in US$ at purchasing power parity).

2.8.1 Before the HDI can itself be calculated, an index needs to be created for each of these dimensions specifying the minimum and maximum values (goalposts) for each of these indicators. The performance in each indicator is expressed as a value between 0 and 1 by applying the following general formula:

\[
\text{Dimension index} = \frac{\text{actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}}
\]

2.8.2 The HDI is then calculated as a simple average of the dimension indices.

2.8.3 The NPC study mentioned in paragraph 2.6.0 has in its methodology of computation defined the measure of deprivation that a state suffers in the case of each of
the eleven variables. Maximum and minimum values are determined for each of the positive first six variables, given the actual values. The deprivation measure then places a state in the range of zero to one as defined by the difference between the maximum and the minimum. Thus $l_{ij}$ is the deprivation indicator for the $j$th state with respect to the $i$th variable and it is measured as:

$$l_{ij} = \frac{\text{Max } X_{ij} - X_{ij}}{\text{Max } X_{ij} - \text{Min } X_{ij}}$$

2.8.4 For the four negative variables (viz. Nos. 7, 9, 10 and 11) adjustments have been made to capture the reverse impact of these variables on the state’s competitive potential.

$$l_{ij} = \frac{\text{Min } X_{ij} - X_{ij}}{\text{Max } X_{ij} - \text{Min } X_{ij}}$$

2.8.5 The second step they have taken is to define an average deprivation indicator ($I_j$). This is done by taking a simple average of the eleven indicators.

$$I_j = \sum_{i=1}^{11} l_{ij}$$

2.8.6 The third step they have taken is to measure the SCI as one minus the average deprivation index.

$$SCI = [1 - I_j] \times 100$$
2.8.7 The NPC mode of compilation of the competitiveness index is similar to the UNDP method for calculating the HDI. The results are given in Exhibit 2.3(a), (b) and (c).

Exhibit 2.3(a)
STATEWISE PHYSICAL INFRASTRUCTURE INDICATORS

<table>
<thead>
<tr>
<th>S. No</th>
<th>Name of the state</th>
<th>Transport infrastructure</th>
<th>Telephones 2.</th>
<th>Electricity 3.</th>
<th>Commercial banks 4.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Punjab</td>
<td>296</td>
<td>31.20</td>
<td>17.23</td>
<td>10.59</td>
</tr>
<tr>
<td>2.</td>
<td>Kerala</td>
<td>393</td>
<td>11.90</td>
<td>5.07</td>
<td>9.75</td>
</tr>
<tr>
<td>3.</td>
<td>Haryana</td>
<td>203</td>
<td>26.90</td>
<td>10.80</td>
<td>7.73</td>
</tr>
<tr>
<td>4.</td>
<td>Gujarat</td>
<td>208</td>
<td>30.30</td>
<td>11.80</td>
<td>8.17</td>
</tr>
<tr>
<td>5.</td>
<td>Karnataka</td>
<td>318</td>
<td>17.20</td>
<td>6.60</td>
<td>9.52</td>
</tr>
<tr>
<td>6.</td>
<td>Tamil Nadu</td>
<td>304</td>
<td>17.70</td>
<td>7.70</td>
<td>7.58</td>
</tr>
<tr>
<td>7.</td>
<td>Maharashtra</td>
<td>301</td>
<td>15.40</td>
<td>11.50</td>
<td>6.97</td>
</tr>
<tr>
<td>8.</td>
<td>Andhra Pradesh</td>
<td>257</td>
<td>14.00</td>
<td>6.40</td>
<td>6.91</td>
</tr>
<tr>
<td>9.</td>
<td>Orissa</td>
<td>473</td>
<td>17.90</td>
<td>5.50</td>
<td>6.59</td>
</tr>
<tr>
<td>10.</td>
<td>Assam</td>
<td>322</td>
<td>20.50</td>
<td>2.40</td>
<td>5.42</td>
</tr>
<tr>
<td>11.</td>
<td>Rajasthan</td>
<td>257</td>
<td>16.90</td>
<td>3.90</td>
<td>6.94</td>
</tr>
<tr>
<td>12.</td>
<td>Madhya Pradesh</td>
<td>232</td>
<td>12.50</td>
<td>5.30</td>
<td>6.54</td>
</tr>
<tr>
<td>13.</td>
<td>West Bengal</td>
<td>114</td>
<td>8.10</td>
<td>4.90</td>
<td>6.16</td>
</tr>
<tr>
<td>14.</td>
<td>Uttar Pradesh</td>
<td>156</td>
<td>13.00</td>
<td>3.60</td>
<td>6.07</td>
</tr>
<tr>
<td>15.</td>
<td>Bihar</td>
<td>127</td>
<td>9.70</td>
<td>1.80</td>
<td>5.61</td>
</tr>
</tbody>
</table>

1. Road+rail+waterways per lakh of population (kms.) (1990-91).
2. Per 1000 population (nos.) (1990-91).
4. Per lakh of population (Nos.) (1990-91).
Source: National Productivity Council, New Delhi, India.

Exhibit 2.3(b)
STATEWISE HUMAN, SOCIAL DEVELOPMENT AND OTHER INDICATORS

<table>
<thead>
<tr>
<th>S. No</th>
<th>Name of the state</th>
<th>Human and Social Development indicators</th>
<th>Other indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Punjab</td>
<td>65.45</td>
<td>57.14</td>
</tr>
<tr>
<td>2.</td>
<td>Kerala</td>
<td>68.67</td>
<td>90.59</td>
</tr>
<tr>
<td>3.</td>
<td>Haryana</td>
<td>62.69</td>
<td>55.33</td>
</tr>
<tr>
<td>4.</td>
<td>Gujarat</td>
<td>59.91</td>
<td>60.91</td>
</tr>
<tr>
<td>5.</td>
<td>Karnataka</td>
<td>62.75</td>
<td>55.98</td>
</tr>
<tr>
<td>6.</td>
<td>Tamil Nadu</td>
<td>60.82</td>
<td>63.72</td>
</tr>
<tr>
<td>7.</td>
<td>Maharashtra</td>
<td>62.40</td>
<td>63.05</td>
</tr>
<tr>
<td>8.</td>
<td>Andhra Pradesh</td>
<td>60.66</td>
<td>45.11</td>
</tr>
<tr>
<td>9.</td>
<td>Orissa</td>
<td>56.14</td>
<td>48.55</td>
</tr>
<tr>
<td>10.</td>
<td>Assam</td>
<td>55.48</td>
<td>53.42</td>
</tr>
<tr>
<td>11.</td>
<td>Rajasthan</td>
<td>58.24</td>
<td>38.81</td>
</tr>
<tr>
<td>12.</td>
<td>Madhya Pradesh</td>
<td>55.47</td>
<td>43.45</td>
</tr>
<tr>
<td>13.</td>
<td>West Bengal</td>
<td>59.79</td>
<td>57.72</td>
</tr>
<tr>
<td>14.</td>
<td>Uttar Pradesh</td>
<td>51.89</td>
<td>41.71</td>
</tr>
<tr>
<td>15.</td>
<td>Bihar</td>
<td>57.60</td>
<td>38.54</td>
</tr>
</tbody>
</table>

5. Life expectancy (1990-91) (Years).
Source: National Productivity Council, New Delhi, India.

Exhibit 2.3(c)

STATEWISE OTHER INDICATORS

<table>
<thead>
<tr>
<th>No</th>
<th>Name of the state</th>
<th>Labour clim. 9.</th>
<th>Pol. stab. 10.</th>
<th>Taxes 11.</th>
<th>SCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Punjab</td>
<td>0.29</td>
<td>16</td>
<td>203</td>
<td>82.80</td>
</tr>
<tr>
<td>2.</td>
<td>Kerala</td>
<td>0.48</td>
<td>16</td>
<td>212</td>
<td>67.71</td>
</tr>
<tr>
<td>3.</td>
<td>Haryana</td>
<td>0.68</td>
<td>13</td>
<td>164</td>
<td>63.25</td>
</tr>
<tr>
<td>4.</td>
<td>Gujarat</td>
<td>0.34</td>
<td>18</td>
<td>373</td>
<td>60.63</td>
</tr>
<tr>
<td>5.</td>
<td>Karnataka</td>
<td>0.13</td>
<td>13</td>
<td>359</td>
<td>56.19</td>
</tr>
<tr>
<td>6.</td>
<td>Tamil Nadu</td>
<td>1.09</td>
<td>12</td>
<td>468</td>
<td>49.10</td>
</tr>
<tr>
<td>7.</td>
<td>Maharashtra</td>
<td>1.36</td>
<td>13</td>
<td>775</td>
<td>48.77</td>
</tr>
<tr>
<td>8.</td>
<td>Andhra Pradesh</td>
<td>0.19</td>
<td>14</td>
<td>405</td>
<td>46.69</td>
</tr>
<tr>
<td>9.</td>
<td>Orissa</td>
<td>0.17</td>
<td>13</td>
<td>93</td>
<td>46.61</td>
</tr>
<tr>
<td>10.</td>
<td>Assam</td>
<td>0.53</td>
<td>13</td>
<td>63</td>
<td>46.41</td>
</tr>
<tr>
<td>11.</td>
<td>Rajasthan</td>
<td>1.75</td>
<td>13</td>
<td>192</td>
<td>39.80</td>
</tr>
<tr>
<td>12.</td>
<td>Madhya Pradesh</td>
<td>0.13</td>
<td>16</td>
<td>273</td>
<td>36.80</td>
</tr>
<tr>
<td>13.</td>
<td>West Bengal</td>
<td>2.58</td>
<td>10</td>
<td>326</td>
<td>34.18</td>
</tr>
<tr>
<td>14.</td>
<td>Uttar Pradesh</td>
<td>0.73</td>
<td>19</td>
<td>456</td>
<td>25.27</td>
</tr>
<tr>
<td>15.</td>
<td>Bihar</td>
<td>0.22</td>
<td>30</td>
<td>169</td>
<td>22.36</td>
</tr>
</tbody>
</table>

10. Political stability(Governments during last 30 years) (Nos.).
12. State Competitiveness Index (SCI).
Source: National Productivity Council, New Delhi, India.

2.9.0 Out of the above options/ factors used which are proposed to be used for determining the relative competitiveness/ competitive advantage of Indian states.

2.9.1. Indian states can be grouped into the following three groups of states as they go up the stages of development.

2.9.2. The first set of states is that which is at a lower levels of development, where the rate of economic growth/ competitiveness is determined primarily by the mobilization of primary factors of production viz. land, primary commodities and unskilled labour and where there is little FDI. These are the BOMARU states (as defined by P.R. Brahmananda explained later in Chapter 5 of this dissertation) in the North and Central India and the states in the North East.
2.9.3 The second set of states is that which is at a middle level of development, where the rate of economic growth/competitiveness is income driven and where there is greater FDI. These are the states of Haryana and Punjab.

2.9.4 The third set of states is that which are at a comparatively high level of development, where the rate of economic growth/competitiveness is determined by the improved manufacturing technologies and the inflows of foreign capital and technology that support high competitiveness and economic growth. These are the states in the south and west of the country close to the coast of India.

2.9.5 Many of the factors used by the WEF, IMD, HCID and the Beacon Hill reports are not likely to result in a meaningful comparison of the competitive advantage of Indian states because many of the factors are determined by the Central Government for the whole country and the states have no control over them. E.g. the legal framework for Information and Communication Technology (ICT) development; laws relating to ICT use; patent and competition laws, availability of telephone lines; control of international distribution; quality of scientific research institutions; brain drain; intellectual property protection; financial market sophistication; venture capital availability; permits to export; distribution of cellular telephones; real exchange rate; recession expectations; access to credit; inflation; Hidden trade barriers; exchange rate and exports; corporate income tax rate; expected exchange rate volatility; exchange rate premium, etc.

2.9.6 Others cannot be measured or accurate data is not available state wise and therefore cannot be used to quantitatively measure the comparative competitiveness of states within India.
References.

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6. Jenster, Per V. and Rubin, Geoffrey M. “Assessment of National Competitiveness: A European Example” (Chapter 9 of “Competitor Intelligence- Turning Analysis into success” by Hussey, David and Jenster, Per V. (John Wiley 1999)).
12. Sachs, Jeffrey D. Professor of Economics and Director of the Center for International Development, Harvard University, USA (HCID)- article in the Economic Times (Mumbai edition dated 7 November 2001 ) “How Competitive are we?”
15. The United Nations University (UNU) and the World Institute of Development Economic Research (WIDER) “Regional Disparities in Human Development” one of the areas for giving priority in research in 2002-03 (source website of UNU-WIDER)
17. The National Competitiveness balance sheet (2001), World Economic Forum (WEF) Davos, Switzerland and Harvard University (Source the website of the WEF).