CHAPTER SIX

SUMMARY OF FINDINGS & CONCLUSION

6.1 This concluding chapter is primarily meant for summarizing the broad inferences of the Study. To facilitate the process, the principal findings of the study have been recapitulated. Hence, the chapter consists of four Sections. Section 6.2 presents the broad findings. Section 6.3 presents the broad inferences followed by concluding comments. Scope for further research in the subject has been discussed in section 6.4.

6.2. Recapitulation of Broad Findings of the Study

6.2.1 Share of Industry in Gross State Domestic Product (GSDP) of Assam and the Trends in the Growth Rate

➢ The structural change in the composition of GSDP of Assam is marked by declining share of Agriculture with a compensatory rising share of Services with Industry barely maintaining its own share.

➢ The share of industry in the GSDP of Assam has remained more or less at a particular level.

6.2.2 Trends in industrial production & its components

➢ Overall industrial production has increased steadily & the increase has been sharper in the post 2001-02 periods.

➢ Output of Electricity, Gas & Water Supply has shown the most impressive growth followed by Manufacturing.

➢ The increase in output in the Registered Manufacturing is more than that of Unregistered Manufacturing.

➢ The Mining & Quarrying segment has become a less important contributor to the GSDP of Assam; as its share has shown a
continuous fall over the entire period and has reached a substantially low level in the terminal years of the study period.

6.2.3 Estimated Compound Annual Growth Rate of Industrial Production in Assam.

➢ The overall industrial production has grown at a moderate growth rate of 3.15% per annum with marginally higher growth rate of Electricity, Gas & Water Supply (6.79%) & Manufacturing (4.05%).
➢ The Registered Manufacturing Sector has recorded a growth rate (4.70%) more than that of Unregistered Manufacturing (2.70%)
➢ Mining & Quarrying Sector has grown at a rate less than 1% per annum.

6.2.4 Acceleration/Deceleration in Industrial Production Growth & Its Components in Assam.

➢ The study observed significant acceleration in the growth rate of total industrial production
➢ Manufacturing & its two respective components have also shown significant acceleration in their growth rates.
➢ The Mining & Quarrying segment has, in fact, experienced a mild deceleration in its growth rate of output.
➢ Electricity, Gas & Water Supply segment has in fact shown a steady increase in its production without showing any significant acceleration or deceleration in its growth rates.

6.2.5 Structural Break in the Growth Rate of Industrial Production

➢ The study found significant step-up in total industrial production. It is mainly fuelled by the significant step-up in manufacturing output growth. The growth rate of total industrial production in the pre-2001-2002 years was 1.98% which rose to 5.42% per annum in the post 2001-02 years. Manufacturing output growth rate during the same sub-periods periods were 2.16% and 7.08% per annum respectively.
The Mining & quarrying segment didn't show either step-up or step-down in the production growth. Its output growth was 1.20% in the pre 2001-02 periods and declined to 0.86% per annum in the post 2001-02 years.

The Electricity, Gas & Water Supply sub-group has in fact shown a steady increase in its production.

6.2.6: Trend & Composition of Unregistered Manufacturing Output in Assam

The growth rate of Unregistered Manufacturing though increased in the post 2001-02 years, the share of this segment in Total Industrial Production & total Manufacturing Production have steadily declined over the entire period. In the terminal period of the study the share of this sector in Total Industrial & Manufacturing production was 12% & 18% respectively.

As per NSSO data, the Unregistered Segment occupies more than 80% share in Total Manufacturing employment and its share in employment has remained almost stable during 1994-95 to 2005-06.

6.2.7 Composition of registered Manufacturing output in Assam as revealed by ASI data

The pie charts drawn for four different years as well as construction of Herfindahl Indices for industry diversification reveal a sign of increasing diversification in the Manufacturing output in Assam in the later years of the study period.

6.2.8 Partial productivity & factor intensity in the Registered Manufacturing segment in Assam

Analysis of partial factor productivity and factor intensity reveals that there has been the tendency of increasing labour productivity with
rising capital labour ratio in the Total Manufacturing as well as in a few other particular industry groups.

- In addition to total Manufacturing, significant correlation was observed in three other industry groups viz., rubber, plastic, petroleum & coal products, textile & textile products and Machineries & parts

6.2.9 Output growth with sources in the Registered Manufacturing Sector in Assam

- Total Manufacturing Output growth rate was estimated to be 4.1% per annum over the entire period. The growth is mainly propelled by TFPG rate of 5.27% per annum.

- The sectors experiencing high growth rate of GVA are paper & paper products, chemical & chemical products, rubber, plastic, petroleum & coal products & non-metallic mineral products. In all the four groups TFPG has been high and labour employment growth has been impressive. The growth rate of capital employment of course has been moderate.

- Industry group basic metal & alloys has also had high TFPG. But due to negative growth rate of labour employment and practically no growth in capital employment, output growth in the sector has limited itself to 3.71% per annum.

- The remaining groups have experienced moderate to mild negative growth in output accompanied by moderate to low growth rate of TFP along with non expansion of factor employment, especially of labour. Within this group, wood & wood products had a massive negative growth of output (-16.48% p.a.) accompanied by similar negative growth in labour employment.
6.2.10. Industries Contributing to Structural Break in Output growth in Post 2001 years.

➢ Chemical & chemical products & non-metallic mineral products have shown significant increase in GVA, labour & capital employment & TFP in post 2001-02 years.

➢ Remaining industry groups have shown either statistically insignificant growth or no growth/or negative growth rate in GVA, in labour & capital employment & TFP in post 2001-02 periods.

6.2.11 Production & Productivity in Two Major Traditional Industries in Assam

➢ Tea manufacturing recorded a moderate growth rate of 2.67% per annum which was mainly attributed to impressive growth in TFP. In this industry, employment of labour & capital increased at a very mild rate.

➢ Petroleum products industry didn’t register a high growth rate of output and was accompanied by a mild negative growth of TFP. Output growth in this industry was mainly driven by growth of labour employment.

6.3. Broad Inferences & Concluding Comments

• The overall trend in growth of industrial production has improved during the study period. However, the growth rate is slower when compared to that of the all India level. Also there are differences in the growth rates among subsectors.

• The industrial growth has been retarded by slowing down of Mining & Quarrying Sector. But step up in the growth of Manufacturing and a steady increase in the output of Electricity, Gas & Water Supply has contributed to the step up in over all industrial production. However, considering the state of industrial & economic development of the
state, an accelerated growth of Electricity, Gas & Water Supply Sector especially electricity is required.

- The Study also finds that there is greater diversification of manufacturing output in the State in the later years of the study period compared to the earlier years. This is in fact a positive sign towards structural changes in the manufacturing sector of Assam.

- Traditional industries have ceased to becoming the driving force of industrial production growth; rather chemical & chemical products, nonmetallic mineral products have emerged as new giants in this direction.

- Overall rising trend in TFP reveals that there has been some technical change and/or improvement in the factor use efficiency in the Registered Manufacturing Sector of Assam.

Thus, based on the findings of the study, we may conclude that incentive packages as included in NEIP 1997 have shown a significant positive impact upon the industrial output growth in Assam. Also, the Manufacturing Sector has become more diversified in the post NEIP 1997 phase. Hence, further strengthening of the policy in 2007 is a laudable task. However, whether this concessional policy will lead to sustainable acceleration in industrial growth has to be observed in the future.

6.4 Scope for Further Research in the Subject

It is however, important to recognize the limitations of the present Study & to delineate the course of further research in this area. The limitations arise mostly from the inadequacy in the secondary data. The ways of getting secondary data allow us to limit our analysis mainly at the level of two digit classification of industries. For a clearer picture of the dynamics of Manufacturing Sector of the State a three digit level classification would have been more useful. Though we have analyzed the production and productivity of a couple of industries taking data from the three digit level, more extensive analysis at three digit classification could not be attempted due to change in
definitions and classification of industry groups at three digit level from time to time during our reference period. Because of changing definitions' and classifications, achieving concordance in data series was difficult.

Moreover, the efficiency in production had to be analyzed at the level of total factor productivity which includes effects of efficiency change as well as organizational and institutional changes. To isolate the 'efficiency' by using Parametric Stochastic Frontier Approach or Nonparametric Data Envelopment Approach, one requires data at firm level for the different industries. Since such data series could not be compiled at the State level, such exercise had to be abandoned. These are areas for further research in the production and productivity of the industrial sector of Assam.